NP-4835/4835i/4835S/4335

SERVICE MANUAL

REVISION 2 DEC. 1991

Canon
FY8-1384-020

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I. FEATURES

1. Multi-purpose digital/analog copier with semiconductor laser. (NP-4835/4835i only)

Although of an analog type, the copier is equipped with a compact semiconductor laser to enable the following functions.

1 Character Generation
- Date (year, month)/Time, Numbering, and Headline Modes
- Stamp Mode (may be used in 2-color mode)
- Character Input Mode
  With this mode, 3 lines of 18 characters may be arranged at any point of the copy.

2 High-Precision Editing (1mm pitch)
- Area Designation (8 areas, 16 points)
- Framing mode
- Blanking mode
- 2-color mode

3 Screen Mode (shading)

4 Copy Control Report
The ID mode helps keep copy counts under control (25 groups max.). The data may be made available in the form of hard copies.

2. Multi-color, one-touch automatic 4-color copying. (NP-4835/4835i only)

- As part of the duplexing system, the copier is equipped with a developing unit for black and one color to enable one-touch, automatic 2-color copying.
- A CD unit changer (option) may be added for additional two colors (from red, blue, green, brown). The units are changed automatically.
- Copies may be in two, three, or four colors through simple operation of the keys.

3. Front-loading of cassettes and a full line of basic features.

- Cassettes (4 max. × 500 sheets) are loaded from the front. This arrangement saves office space, and the compact design of the copier makes its introduction to the office easier than before.
- As many as 35 sheets (A4/Letter, landscape) can be obtained per minute.
- The reproduction ratio may be between 50% and 200% (wide zoom).
- Copy sizes may be from A3/Ledger to post cards. Furthermore, copies can be made on tracing paper, OHP and other materials.
- For mono-color copies, the color may be black, red, blue, green, or brown. (NP-4835/4835i only)
- With the adoption of the set-back system, the copier is designed incorporating a compact duplexing system.

4. User-friendly and advanced features, with the addition of dialogue-type messages on the liquid crystal display.

- Operation is as easy as responding to the messages on the display.
- The copier has an extra feature to indicate the date and time.
- The advanced features of the copier can help further improve the copying efficiency. They include:
  Automatic selection of paper sizes and reproduction ratios, automatic two-sided/overlay copying (A4/B5/Letter, 20 copies in continuous mode; A3/B4/Ledger/Legal, 1 copy in single mode), two-page separation (two-page separation/*color overlay, etc.), binding margin/frame margin erasing, photo mode, zoom program, automatic cassette change, power saving, ID (25 groups max.), daily off (automatic power OFF), mode memory.

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5. Wide-ranging options.

- The copier not only accepts a wide range of options, but also is designed to speed up the communication with its options. This extra consideration has resulted in increased overall copy speed.

Image Editing Unit	: Editing unit which accepts input for areas and characters made with a cardless pen. (NP-4835/4835i only)
RDF-II	: Automatic two-sided document feeder of a recirculation type.
D-ADF	: Automatic two-sided document feeder.
D-ADF Editor	: Document feeder which, in addition to serving as a D-ADF, accepts input for areas and characters. (NP4835/4835i only)
Staple Sorter	: 20-bin sorter which groups/sorts and, then, automatically staples copies.
Sorter VIII	: 20-bin sorter which groups/sorts copies.
Auto Stapler Folder	: Folder which folds (in Z or halves) and staples copies.
Cassette Feeding Unit	: Cassette unit which allows use of two additional cassettes with the copier.
Paper Deck VIII	: Paper deck which is capable of holding up to 2,000 sheets of paper.
CD Unit Changer	: Unit which can select CD unit automatically. (NP-4835/4835i only)
CC-V	: Control card (built into the control panel) which keeps count of the copies made (200 groups max.).
IC Card Unit	: Enables expansion of stamp type and mode memory size. (NP-4835i only)

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II. SPECIFICATIONS

A. Construction

Item	NP-4835/4835i	NP-4835S/4335
Body	Desk top type	
Copyboard	Fixed	
Light source	Halogen lamp 270 W (100V/115V models) 300 W (220V/240V models)	
Lens	Zoom	
Photosensitive drum	OPC	

B. Type

Item		NP-4835/4835i	NP-4835S/4335
Copying process		Indirect electrostatic copying	
Charging		Corona	
Exposure		Slit (moving light source) + * Laser beam	
Copy density control		Automatic or manual	
Developing		Dry (black developing assembly + * CD unit)	
Paper pick-up	Automatic	2 cassettes	
	Manual	Manual feed tray	
Transfer		Corona	
Separation		Corona (electrostatic)	
Cleaning		Blade	
Fixing		Heater roller (800 W)	

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C. Performance

Item			NP-4835/4835i	NP-4835S/4335
Document type			Sheet, Book, 3-D objects (2 kg max.)	
Document size (max.)			A3 (297 mm × 420 mm)/Ledger (11" × 17")	
Reproduction ratio			DIRECT, Fixed (Table 1-1), Stepless (50% to 200%)	
Warm-up			4 min (approx., at 20°C)	
1st copy			7 sec (A4 in AE)	
Continuous copying			999 copies max.	
Copy speed			See Table 1-2.	
Copy size			A3/Ledger (297 mm × 431.8 mm) max. Post card (100 mm × 148 mm) min.	
	From cassette		Plain paper (64 g/m² to 80 g/m²), Tracing paper (SM1), Colored paper	
	From manual feed tray		Plain paper (64 g/m² to 128 g/m², Tracing paper (SM1, GNT80), Color paper; OHP film, Label; Commercial or Canon-recommended post card	
	Two-sided/ Overlay	Automatic	Plain paper (64 g/m² to 80 g/m²), Colored paper	
		From manual feed tray	Plain paper (64 g/m² to 128 g/m²), Colored paper; OHP film (overlay only): Commercial or Canon-recommended post card	
Cassette			Front-loading clawless cassette 54 mm deep (about 500 sheets of 80 g/m² paper)	
Delivery tray			100 sheets (approx., 80 g/m²)	
Non-image area (width)			2.0 + 2.0/– 1.0 mm (leading edge); 2.0 ± 1.0 mm (left/right)	
Auto-clear			Provided. (2 min standard, variable between 1 min to 9 min in 1-min increment; may be disabled)	
Auto shut-off			Provided (2 hr standard; may be disabled)	
Daily off timer			Provided (set in 1-min increment)	
Options			D-ADF, RDF-II, D-ADF Editor Image Editing Unit V CD Unit Changer Staple Sorter, Sorter VIII Cassette Feeding Unit Paper Deck VIII Control Card V Auto Stapler Folder※ Auto Stapler II※ IC Card Unit I※	D-ADF, RDF-II Staple Sorter, Sorter VIII Auto Stapler Folder Cassette Feeding Unit Paper Deck VIII Control Card V

※ NP-4835i only.

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D. Others

Item		NP-4835/4835i		NP-4835S/4335
Operating environment	Temperature	7.5°C to 32.5°C		
	Humidity	10% to 85% (RH)		
	Atmospheric pressure	0.6 to 1 atm		
Power source		NP-4835	NP-4835i	NP-4835S/4335
	100V 50/60 Hz	APH XXXXX APJ XXXXX	AVF XXXXX AVE XXXXX	ATH XXXXX
	115V 60 Hz	CPH XXXXX CUJ XXXXX CRW XXXXX	CVE XXXXX CWF XXXXX CVF XXXXX	CTH XXXXX CUK XXXXX
	220V 50 Hz	DPH XXXXX	DVE XXXXX	DTH XXXXX
	240V 50 Hz	EPH XXXXX	EVE XXXXX	ETH XXXXX
	240V 50 Hz	FPH XXXXX FRW XXXXX	FVE XXXXX FVG XXXXX	FTH XXXXX
	220V 50 Hz	GPH XXXXX	GVE XXXXX	GTH XXXXX
	220V 50 Hz	HPH XXXXX	HVE XXXXX	HTH XXXXX
	220V 50 Hz	KPH XXXXX	KVE XXXXX	KTH XXXXX
Power consumption	Max.	1.5 kw		
	Standby	Approx. 0.20 kwh (average)		
	Continuous (A4)	Approx. 1.02 kwh (average)		
Noise	When copying	55 dB or less (1 m from copier)		
	At standby	40 dB or less (1 m from copier)		
Ozone (average over 8 hr)		0.1 ppm or less		
Dimensions	Width	700 mm		
	Depth	690 mm		
	Height	623 mm[1] 958 mm[2] 638 mm[3]		
Weight		94.5 kg[1]		92.0 kg[1]
		126.5 kg[2]		124.0 kg[2]
		96.0 kg[3]		—
		128.0 kg[4]		—
Consumables	Copy paper	Keep wrapped to protect against humidity.		
	Toner	Avoid direct sun, and store under 40°C and 85%.		
	CD unit	Keep in box or pedestal. Avoid sun, and store under 30°C and 85%		

[1] Copyboard cover type; includes 2 cassettes.
[2] Copyboard cover type; includes 4 cassettes.
[3] Editor type; includes 2 cassettes.
[4] Editor type; includes 4 cassettes.

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	DIRECT	REDUCE	ENLARGE
100/220/240V	1 : 1 (±0.5%)	1 : 0.500 1 : 0.707 1 : 0.816 1 : 0.865	1 : 1.154 1 : 1.224 1 : 1.414 1 : 2.000
115V	1 : 1 (±0.5%)	1 : 0.500 1 : 0.647 1 : 0.773 1 : 0.786	1 : 1.214 1 : 1.294 1 : 2.000
220/240V	1 : 1 (±0.5%)	1 : 0.500 1 : 0.707	1 : 1.414 1 : 2.000

Table 1-1 Fixed Reproduction Ratios

Reproduction ratio		Copy size	No. of copies/min
DIRECT	1 : 1 (±0.5%)	A3 A4 A4R B4 B5 B5R Ledger Legal Letter Letter R	20 35 27 23 35 31 20 23 35 28
REDUCE	1 : 0.647	Ledger → LetterR	26
	1 : 0.707	A3 → A4R B4 → B5R	25 28
	1 : 0.773	Ledger → Legal	23
	1 : 0.786	Legal → LetterR	27
	1 : 0.816	B4 → A4R	26
	1 : 0.865	A3 → B4 A4 → B5	22 35
ENLARGE	1 : 1.414	A4R → A3 B5R → B4	20 23
	1 : 1.294	Letter → Ledger	20
	1 : 1.224	A4R → B4	23
	1 : 1.214	Legal → Ledger	20
	1 : 1.154	B4 → A3 B5 → A4	20 35

Table 1-2 Copy Speed

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Paper size	Dimensions	
	(mm)	(in)
A3	297 × 420	11.7 × 16.5
A4	210 × 297	8.3 × 11.7
A5	148.5 × 210	5.8 × 8.3
B4	357 × 364	10.1 × 14.3
B5	182 × 257	7.2 × 10.1
B6	128.5 × 182	5.1 × 7.2
Ledger (11″ × 17″)	279.4 × 431.8	11 × 17
Legal	216 × 356	8.5 × 14
Letter	216 × 279	8.5 × 11
Mini (STMT)	139.5 × 216	5.5 × 8.5
Korean Legal	190 × 265	7.5 × 10.4
Folio	210 × 330	8.3 × 13
Foolscap	216 × 330	8.5 × 13
Australian Foolscap	206 × 337	8.1 × 13.3
Argentine Legal	220 × 340	8.7 × 13.4
Argentien Letter	220 × 280	8.7 × 11.0
U.S. Goverment Legal	203 × 330	8 × 13
U.S. Goverment Letter	203 × 267	8 × 10.5
Officio	216 × 317	8.5 × 12.5
Argentine Officio	220 × 340	8.7 × 13.4
Ecuador Officio	220 × 320	8.7 × 12.6
Bolivia Officio	216 × 355	8.5 × 14.0

Table 1-3 Paper Size

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E. Editor (NP-4835/4835i only)

Effective area	297 mm × 432 mm
Area designation accuracy	±1.0 mm (editor alone; does not include input errors of pen or other instruments)
Input	By pen or other instruments (buzzer sounded upon input).
Area designation	8 area max. (input by diagonal points) 16 points max. (with multi-point input)
Color conversion	Framing, Blanking, 2-color
Character input	54 max. (18 characters/line × 3 lines) (3 point max, NP-4835i). Character rows (vertical, horizontal), output location, and color may be specified.
Stamp	1 selected from 5 stamps (3 selected (max.) from 5 stamps, NP-4835i). Stamp orientation (vertical, horizontal), output location, and color may be specified.
Screen	Full, or single area (selectable).
Highlight	4 areas max., color: shade, point and frame (NP-4835i).
Power source	5V DC (from copier)
Dimensions	555 W × 490 D × 43 H (mm)
Weight	3 kg

F. CD Unit Changer (NP-4835/4835i only)

Capacity	3 units max.
Control panel	CD UNIT LOCATION indicator, CD UNIT OUT key, CD UNIT SELECT key, CD UNIT COLOR indicator
Speed	28 sec max. (changing CD units)
Noise	55 dB or less
Power source	24V DC (from copier)
Dimensions	285 (345*) W × 625 D × 365 H (mm) *Includes manual feed guide.
Weight	20 kg

G. Cassette Feeding Unit

Cassette	2 (4, combined with cassettes in copier)
Copy paper	As per copier.
Power source	24V DC (from copier)
Dimensions	700 W × 570 D × 337 H (mm)
Weight	27 (32 *kg) kg * Includes two cassettes.

H. Paper Deck VIII

Paper size	A4, B5, Letter
Paper type	Plain paper (64 g/m² to 80 g/m²)
Capacity	213 mm deep (about 2000 sheets of 80 g/m² paper)
Size change	Step by partition + Slide switch
Power source	24V DC (from copier)
Dimensions	310 W × 454 D × 330 H (mm)
Weight	11 kg

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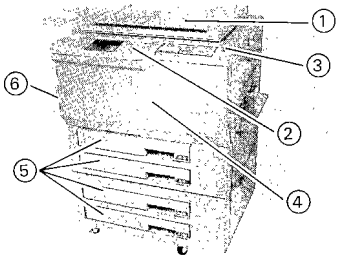
III. NAMES OF PARTS

A. Exterior View



① Copyboard cover
② Control panel
③ Power switch
④ Front door
⑤ Cassettes
⑥ Delivery cover

Figure 1-1

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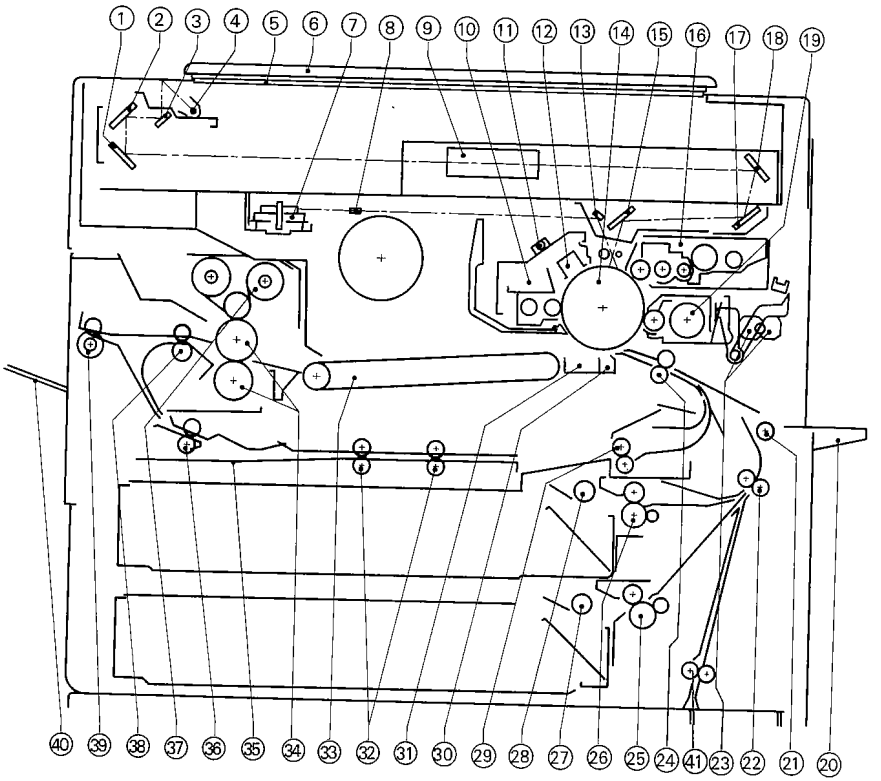
B. Cross-Sectional View

1. Cross Section of Copier



① Mirror 3
② Mirror 2
③ Mirror 1
④ Scanning lamp
⑤ Copyboard glass
⑥ Copyboard cover
⑦ Laser scanner
⑧ Lens (for laser)
⑨ Zoom lens
⑩ Cleaning unit
⑪ Pre-conditioning lamp
⑫ Primary corona unit
⑬ Mirror (for laser)
⑭ OPC drum
⑮ Mirror 6
⑯ CD unit
⑰ Mirror 5
⑱ Mirror 4
⑲ Developing assembly (black)
⑳ Manual feed tray
㉑ Manual feed pick-up roller
㉒ No. 2 registration roller
㉓ Cam
㉔ No. 1 registration roller
㉕ Cassette 2 separation roller
㉖ Cassette 1 separation roller
㉗ Cassette 2 pick-up roller
㉘ Cassette 1 pick-up roller
㉙ Lower feeder outlet roller
㉚ Transfer corona unit
㉛ Separation corona unit
㉜ Set-back roller
㉝ Feeder belt
㉞ Fixing roller
㉟ Lower feeder unit
㊱ Lower feeder inlet roller
㊲ Cleaning belt
㊳ No. 1 delivery roller
㊴ No. 2 delivery roller
㊵ Delivery tray
㊶ No.3 registration roller

Figure 1-2 Cross Section of NP-4835/4835i

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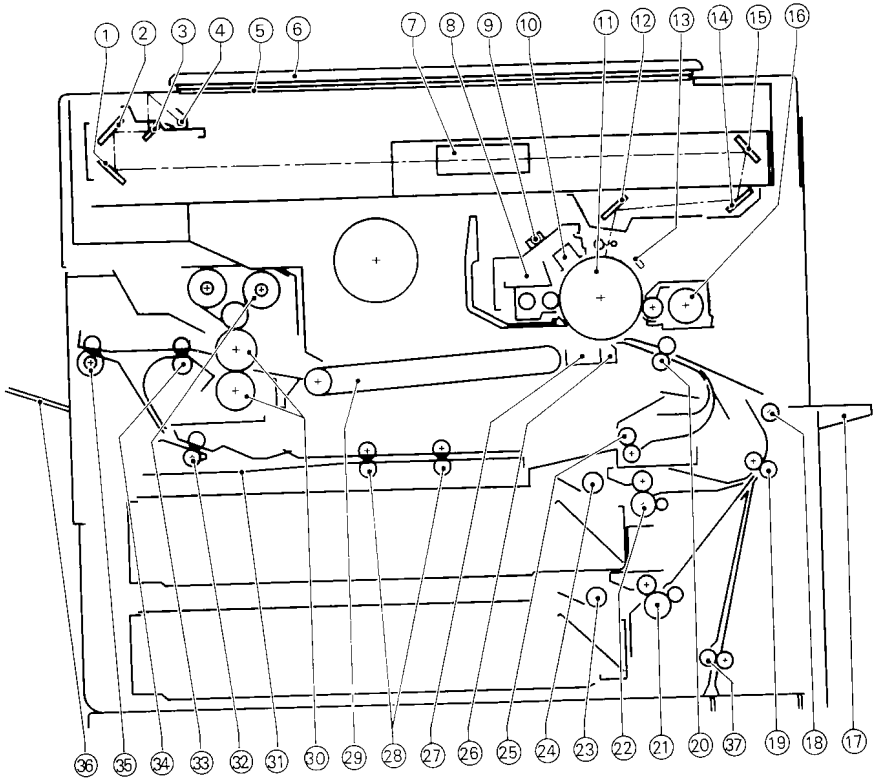

① Mirror 3
② Mirror 2
③ Mirror 1
④ Scanning lamp
⑤ Copyboard glass
⑥ Copyboard cover
⑦ Zoom lens
⑧ Cleaning unit
⑨ Pre-conditioning lamp
⑩ Primary corona unit
⑪ OPC drum
⑫ Mirror 6
⑬ Blank exposure lamp
⑭ Mirror 5
⑮ Mirror 4
⑯ Developing assembly (black)
⑰ Manual feed tray
⑱ Manual feed pick-up roller
⑲ No. 2 registration roller
⑳ No. 1 registration roller
㉑ Cassette 2 separation roller
㉒ Cassette 1 separation roller
㉓ Cassette 2 pick-up roller
㉔ Cassette 1 pick-up roller
㉕ Lower feeder outlet roller
㉖ Transfer corona unit
㉗ Separation corona unit
㉘ Set-back roller
㉙ Feeder belt
㉚ Fixing roller
㉛ Lower feeder unit
㉜ Lower feeder inlet roller
㉝ Cleaning belt
㉞ No. 1 delivery roller
㉟ No. 2 delivery roller
㊱ Delivery tray
㊲ No. 3 registration roller

Figure 1-2A Cross Section of NP-4835S/4335

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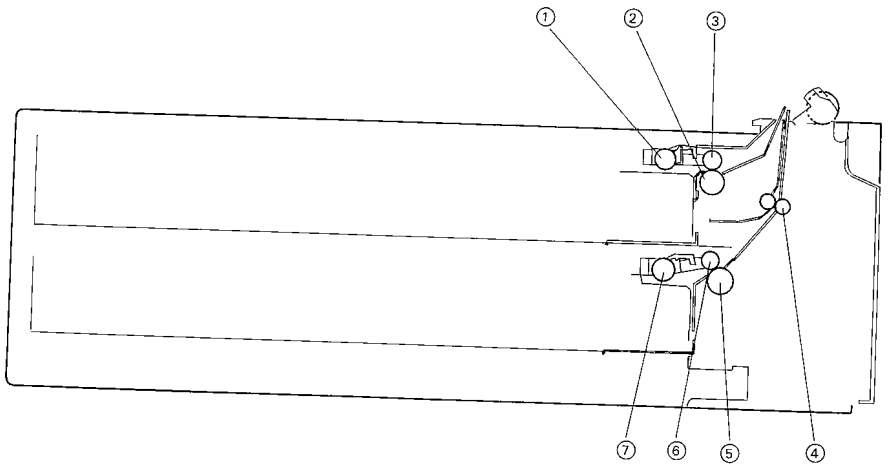
2. Cross Section of Cassette Feeding Unit (cassettes 3 and 4)



① Cassette 3 pick-up roller
② Cassette 3 separation roller
③ Cassette 3 feeder roller
④ No. 4 registration roller
⑤ Cassette 4 separation roller
⑥ Cassette 4 feeder roller
⑦ Cassette 4 pick-up roller

Figure 1-2B Cross Section of Cassette Feeding Unit (cassettes 3 and 4)

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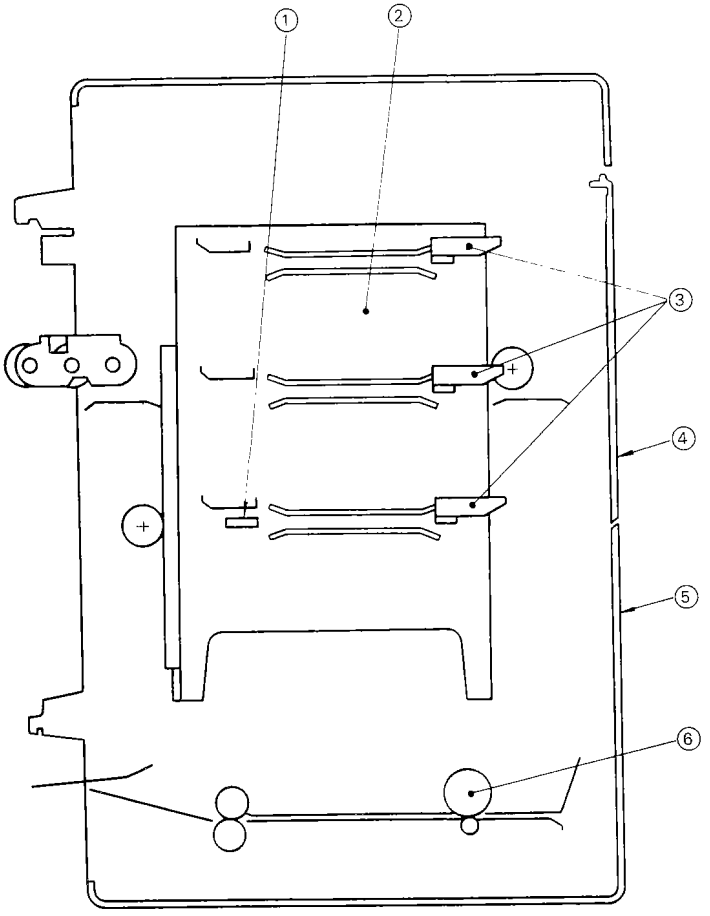
3. Cross Section of CD Unit Changer



① Feed gear
② Compartment
③ CD unit claw
④ CD unit door
⑤ Manual feed door
⑥ Manual feed roller

Figure 1-2C Cross Section of CD Unit Changer

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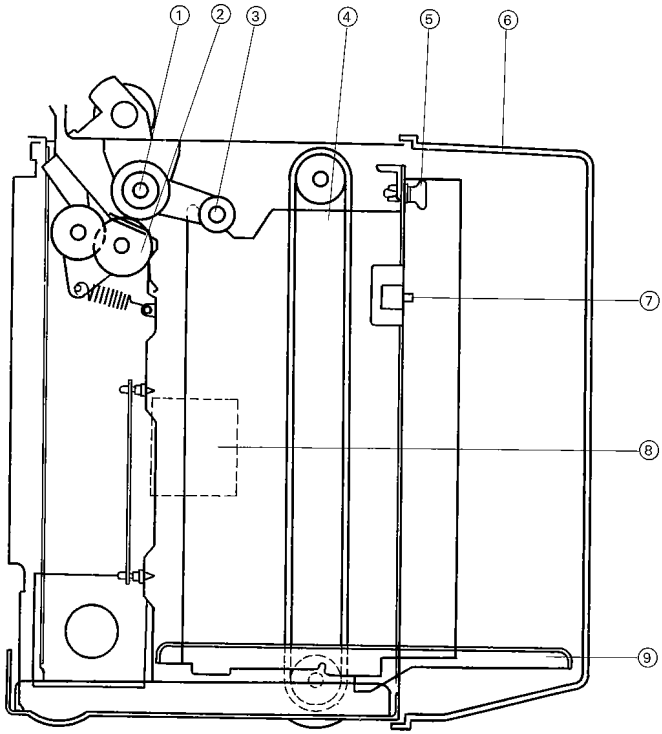
4. Cross Section of Paper Deck VIII



① Separation roller
② Feeder roller
③ Pick-up roller
④ Partition
⑤ Latch plunger
⑥ Paper cover
⑦ Size switch
⑧ Pick-up motor
⑨ Lifter
⑩ Lifter motor

Figure 1-2D Cross Section of Paper Deck VIII

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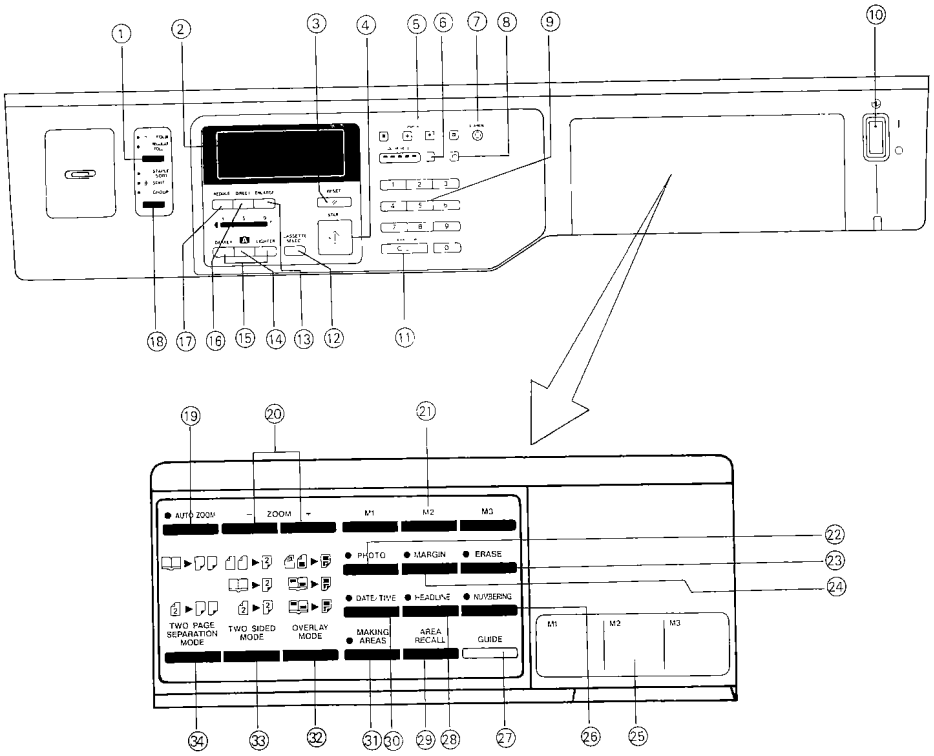
IV. OPERATION

A. Control Panel

■ **NP-4835**



① FOLD key
② MESSAGE display
③ RESET key
④ START key
⑤ DISPLAY keys
⑥ COLOR SELECT key
⑦ STANDBY key
⑧ ID key
⑨ NUMBER keys
⑩ POWER switch
⑪ CLEAR/STOP key
⑫ CASSETTE SELECT key
⑬ ENLARGE key
⑭ AE key
⑮ COPY DENSITY keys
⑯ DIRECT key
⑰ REDUCE key
⑱ STAPLE/SORT/GROUP key
⑲ AUTO ZOOM key
⑳ ZOOM keys
㉑ MODE MEMORY keys
㉒ PHOTO key
㉓ ERASE key
㉔ MARGIN key
㉕ COPY MODE memo label
㉖ NUMBERING key
㉗ GUIDE key
㉘ HEADLINE key
㉙ AREA RECALL key
㉚ DATE/TIME key
㉛ MAKING AREAS key
㉜ OVERLAY MODE key
㉝ TWO-SIDED MODE key
㉞ TWO-PAGE SEPARATION MODE key

Figure 1-3

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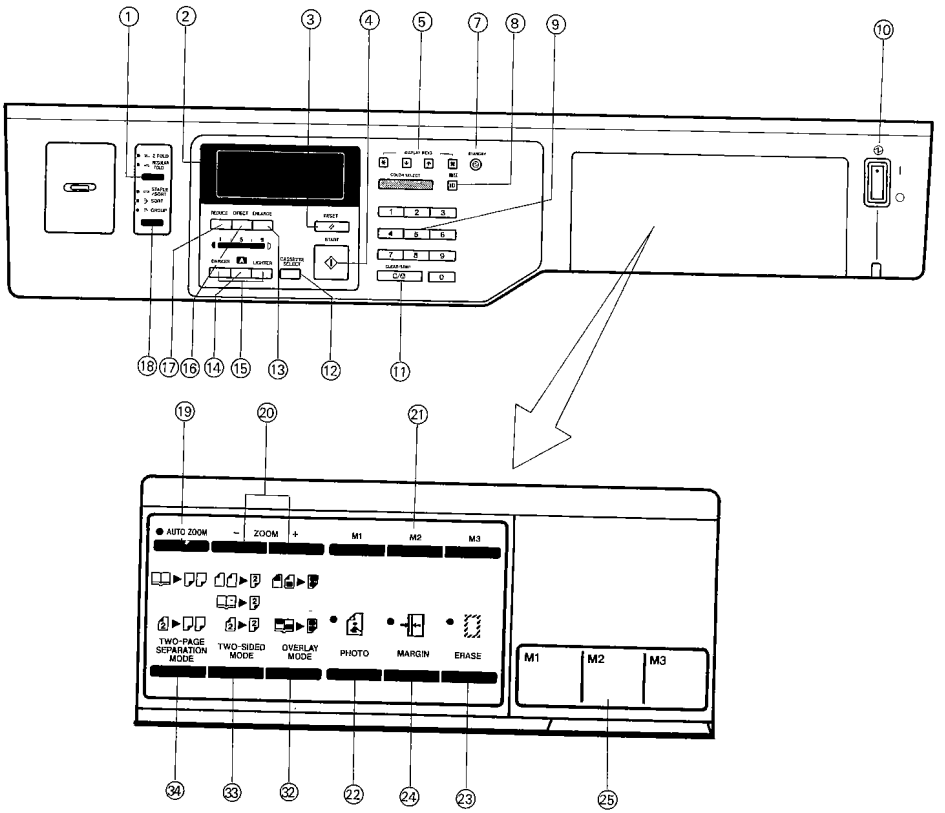

① FOLD key
② MESSAGE display
③ RESET key
④ START key
⑤ DISPLAY keys
⑦ STANDBY key
⑧ ID key
⑨ NUMBER keys
⑩ POWER switch
⑪ CLEAR/STOP key
⑫ CASSETTE SELECT key
⑬ ENLARGE key
⑭ AE key
⑮ COPY DENSITY keys
⑯ DIRECT key
⑰ REDUCE key
⑱ STAPLE/SORT/GROUP key
⑲ AUTO ZOOM key
⑳ ZOOM keys
㉑ MODE MEMORY keys
㉒ PHOTO key
㉓ ERASE key
㉔ MARGIN key
㉕ COPY MODE memo label
㉜ OVERLAY MODE key
㉝ TWO-SIDED MODE key
㉞ TWO-PAGE SEPARATION MODE key

Figure 1-3A

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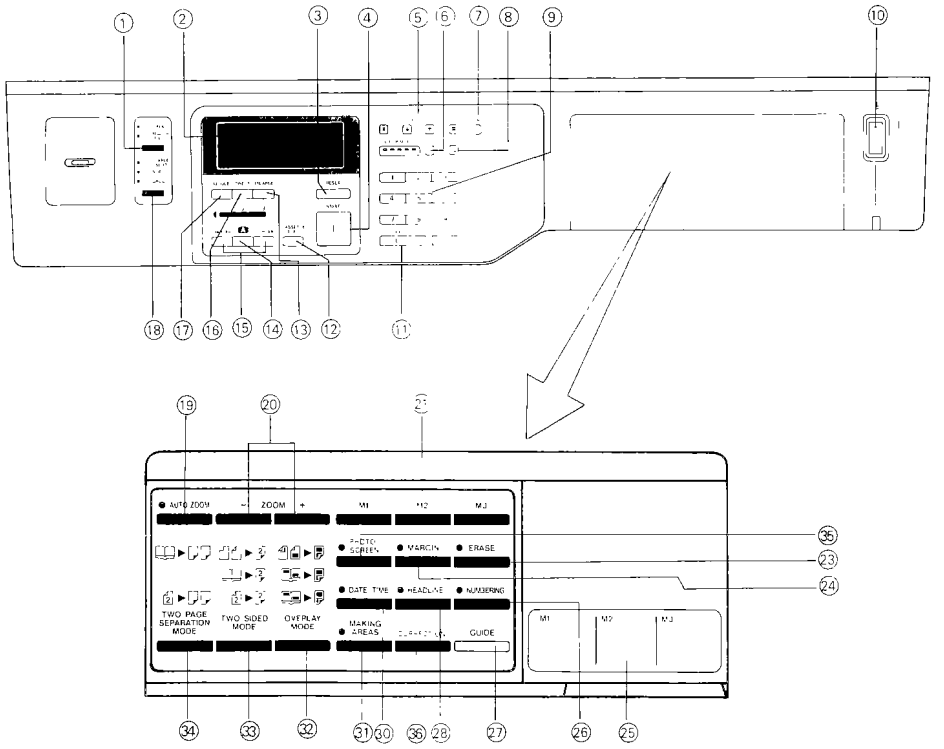
■ NP-4835i



① FOLD key
② MESSAGE display
③ RESET key
④ START key
⑤ DISPLAY keys
⑥ COLOR SELECT key
⑦ STANDBY key
⑧ ID key
⑨ NUMBER keys
⑩ POWER switch
⑪ CLEAR/STOP key
⑫ CASSETTE SELECT key
⑬ ENLARGE key
⑭ AE key
⑮ COPY DENSITY keys
⑯ DIRECT key
⑰ REDUCE key
⑱ STAPLE/SORT/GROUP key
⑲ AUTO ZOOM key
⑳ ZOOM keys
㉑ MODE MEMORY keys
㉓ ERASE key
㉔ MARGIN key
㉕ COPY MODE memo label
㉖ NUMBERING key
㉗ GUIDE key
㉘ HEADLINE key
㉚ DATE/TIME key
㉛ MAKING AREAS key
㉜ OVERLAY MODE key
㉝ TWO-SIDED MODE key
㉞ TWO-PAGE SEPARATION MODE key
㉟ PHOTO/SCREEN key
㊱ CORRECT key

Figure 1-3B

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Control Panel

Name of keys	Function	Remarks
1. FOLD key	Press the key to select the thirds- or halves-folding. (effective only with finisher)	
2. MESSAGE display	With the standard screen, the display identifies the reproduction ratio, paper size selected, and number of copies. With the mode selection screen, the display shows messages for mode selection.	
3. RESET key	Press the key to select the standard modes for copy operation. Standard modes: Reproduction ratio .... 100% Paper size ..... Auto select Number of copies ..... 1 Color of copy ..... Black	
4. START key	Press the key to start copy operation.	
5. DISPLAY keys	Press the keys to select modes in response to the prompts on the message display. (application mode, asterisk mode, guide mode, etc.)	
6. COLOR SELECT keys	Press the key to select either black, red, blue, green, or brown for the copy.	NP-4835/4835i only.
7. STANDBY key	Press the key to select or cancel the power-saving feature.	
8. ID key	Enter an ID No. (number keys); otherwise, the copier will not accept the command. Press the ID key after copy operation to render the copier ready for another ID No.	
9. NUMBER keys	Use the keys to set the number of copies to make or to enter values when setting modes.	
10. POWER switch	Press the key to turn the copier ON and OFF.	
11. CLEAR/STOP key	Press the key to clear the number of copies set to 1, to clear values entered while setting a mode or to stop copying operation.	
12. CASSETTE SELECT key	Press the key for auto paper selection or for selection of a cassette.	If cassettes of the same size are set, the lower cassette will be selected.
13. ENLARGE key	Press the key to select the ENLARGE mode. (with fixed reproduction ratio)	
14. AE key	Press the key to select or cancel the automatic exposure mode (AE).	
15. COPY DENSITY keys	Press the keys to adjust the copy density manually.	
16. DIRECT key	Press the key to return the reproduction ratio to DIRECT (100%).	
17. REDUCE key	Press the key to select the REDUCE mode. (with fixed reproduction ratio)	
18. STAPLE/SORT/GROUP key	Press the key to select the staple, sort, and group modes. (staple mode effective only with staple sorter or finisher; sort and group modes effective only with sorter or staple sorter)	

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Name of keys	Function	Remarks
19. AUTO ZOOM key	Press the key to select or cancel the automatic zoom mode.	
20. ZOOM keys	Press the keys to set reproduction ratios between 50% and 200% in 1% increment.	
21. MODE MEMORY keys	Press the keys to recall copy modes stored in memory. (To store modes, press the * key, memory key of the mode desired, and * key; 3 modes max.)	
22. PHOTO key	Press the key to select or cancel the photo mode.	
23. ERASE key	Press the key to select or cancel the erasing mode. 1. Sheet frame erasing. Erases a width of 7 mm on four sides. 2. Document frame erasing. Select document size in advance. 3. Book frame erasing*. Select book size (spread open) in advance.	* NP-4835/4835i only.
24. MARGIN key	Press the key to select the margin mode. (The binding margin can be adjusted between 1 mm and 20 mm in 1mm increment. Standard is left margin; use the asterisk mode to select right margin.)	
25. COPY MODE memo label	Keep notes of the copy modes stored in memory.	
26. NUMBERING key	Press the key to select or cancel the numbering mode. Copies will be paginated at a fixed position on the copies. Use of Feeder: The documents set on the document tray will be counted automatically when the START key is pressed. For a D-ADF, set the documents delivered after the auto count operation, and press the START key. For a RDF-II, this is automatic. For manual operation, enter the number of the last page for pagination with the number keys.	NP-4835/4835i only.
27. GUIDE key	Press the key to bring up the prompts. Another press will cancel the guide mode. (Use the or keys to change back and forth the screens.)	NP-4835/4835i only.
28. HEADLINE key	Press the key to select or cancel the headline mode. Any single headline from among those stored in advance (5 max.) will be placed at a fixed position on the copies. (Use the asterisk mode to store the memos.)	NP-4835/4835i only.

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Name of keys	Function	Remarks
29. AREA RECALL key	Press the key to correct the area for the following: 1. To change modes 2. To change colors 3. To correct areas 4. To add areas (An area must have been designated in advance.)	NP-4835/4835i only.
30. DATE/TIME key	Press the key to select or cancel the date/time mode. The current year, month, day, and time will be placed at a fixed position on the copies. The designation (e.g., February 22, 1989, 10:25) may be any one of the following four: 1. 1989.2.22 2. 22/2/1989 3. FEB.22.1989 4. 2/22 10:25	NP-4835/4835i only.
31. MAKING AREA key	Press the key to start the area designation. Choose from the following three modes: 1. Framing 2. Blanking 3. 2-color copying A total of eight rectangular areas may be designated. If an editor is used, input may be from the editor or from the number keys. Otherwise, input is from the number keys only. (With an editor, multi-point areas may be designated.)	With the CD unit changer, combination of two mono-colors is possible (2-color framing). NP-4835/4835i only.
32. OVERLAY mode key	Press the key to select the following modes: 1. Overlay copy 2. Two-page separation/overlay copy 3. Two-page separation/color overlay copy*	With the CD unit changer, combination of two mono-colors may be specified. * NP-4835 /4835i only.
33. TWO-SIDED mode key	Press the key to select the following modes: 1. One-sided document to two-sided copy 2. Two-page separation/two-sided copy 3. Two-sided document to two-sided copy*	* Effective with a feeder (RDF-II, D-ADF) only.
34. TWO-PAGE SEPARATION mode key	Press the key to select the following modes: 1. Two-page separation copy 2. Two-sided document to two one-sided copies*	* Effective with a feeder (RDF-II, D-ADF) only.
35. PHOTO/SCREEN key	Press the key to select or control and/or screen mode.	
36. CORRECT key	Press the key to correct the area, character input, stamp or highlight mode	

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B. Asterisk Modes (user mode)

The asterisk modes are made available to give the user free access in setting modes.

	Function
*	Zoom program
	Headline input
	Correcting the density
	Copying different size original
	Counting originals automatically (feeder)
*	Set/Group number
*	Character/image priority selection
	Left/Right margin selection
	Daily off
	Setting auto clear time
	Time adjustment
*	Double mode memory
	Mode memory
	ID mode
※	STAMP cover/all pages selection
※	CHARACTER INPUT cover/all pages selection

* NP-4835/4835i only.
※ NP-4835i only.

Table 1-3 Asterisk Modes

1. Using the Zoom Program

Enter the size of the document and the size of the copy desired to select the best reproduction ratio.

1) Press the [✳], [1], and [✳] keys in sequence.
2) Enter the size of the document with the number keys, and press the [↓] key.

- For example, enter 100 (mm).

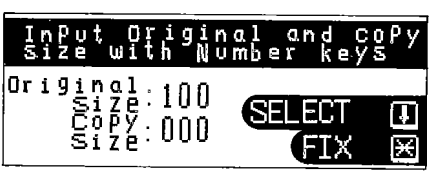

Figure 1-4

3) Enter the size of the copy desired.

- For example, enter 60 (mm).

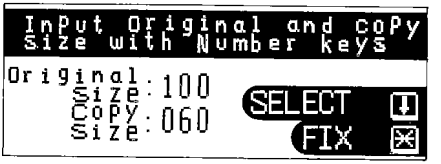

Figure 1-5

4) Press the [✳] key.

- The copier calculates the reproduction ratio and sets it to 60%; 60 ÷ 100 = 0.6.

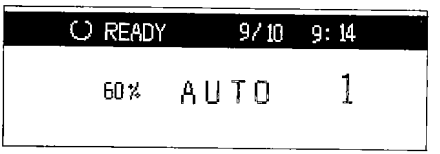

Figure 1-6

2. Storing the Headline (NP-4835 only)

Enter the headline mode (p. 1-15) to store a headline for copies. A total of five handlines of 20 characters/line may be registered.

1) Press the [✳], [2], and [✳] keys in sequence.
2) Press the [↓] key to select the memo No. (memo [1] through memo [5]), and press the [#] key.

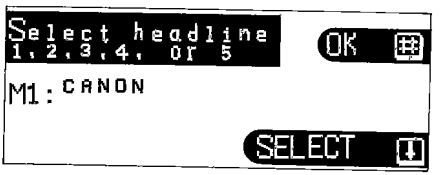

Figure 1-7

■ With Editor

3) Press the characters desired in sequence; pick from the character list on the editor.
The characters so entered will be shown on the message display.
Use the C key to clear all characters if necessary. (Characters cannot be cleared on a single character basis.)

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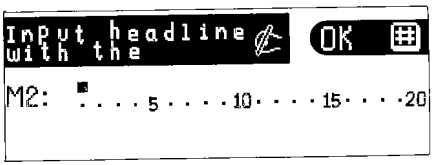

Figure 1-8

4) When input is complete, press the key.

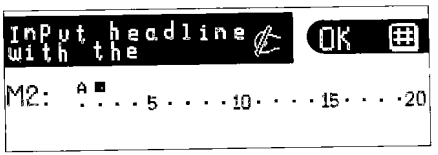

Figure 1-9

5) To store headlines in succession, press the ↓ key, select the memo No., and press the # key.
6) Press the # key to return to the standard screen.

■ Without Editor

3) Each press on the ↓ key brings available characters on the screen in sequence. Press the * key when the character desired appear. The character will be verified, and the flashing cursor moves to the right. Continue the operation until all characters are entered.
Use the C key to clear all characters if necessary. (Characters cannot be cleared on a single character basis.)

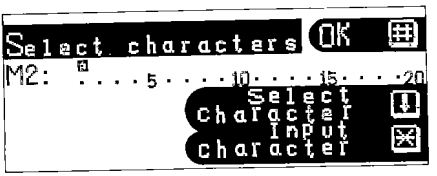

Figure 1-10

4) When input is complete, press the # key.
5) To store headlines in succession, press the ↓ key, select the memo No., and press the # key.
6) Press the # key to return to the standard screen.

3. Correcting the Density (DC bias)

If the copies are still too dark or too light after manual density adjustment, use this mode to change developing DC bias.

1) Press the * , 3 , and * keys in sequence. (See Note.)
2) To make the copies darker, press the ↓ key; and lighter, the ↑ key.

Note:
For NP-4835S/4335, *, 2, and *.

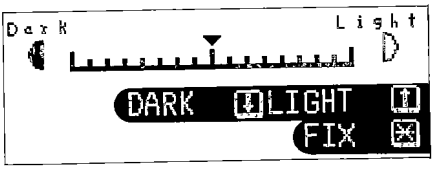

Figure 1-11

3) Press the * key to return to the standard screen.

4. Copying Different Size Originals

Originals of different sizes may be set in the feeder while still using the auto paper selection and auto reproduction ratio modes. The copy speed, however, will slow down.

Note:
Documents should be of the same cross-feed size; i.e., A4 and A3, B5 and B4, Letter and Ledger.

1) Press the * , 4 , and * keys in sequence. (See Note.)
2) Press the ↓ key to select '2: ON.'

Note:
For NP-4835S/4335, *, 3, and *.

Figure 1-12

3) Press the * key to return to the standard screen.

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5. Counting Original Automatically

When making two-sided copies from one-sided originals set in the feeder, the originals will be counted before the copy operation so that the first pages of the originals are on the face side of the copies; if the originals are in odd number, the last page of the originals will be a one-sided copy. This count, however, can be canceled.

1) Press the ✳ , 5 , and ✳ keys in sequence. (See Note.)
2) Press the ↓ key to select '2: OFF.'

Note:
For NP-4835S/4335, ✳, 4, and ✳.

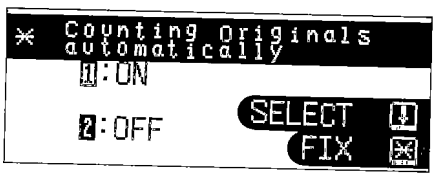

Figure 1-13

3) Press the ✳ key to return to the standard screen.

6. Set/Group Number mode (NP-4835 only)

With the Set/Group Number mode, the page number of copies can be placed at a fixed position* on the copies.

1) Press the ✳ , 6 , and ✳ keys in sequence.
2) Press the ↓ key to select '2 : ON.'

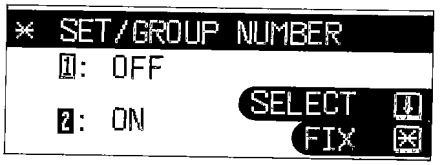

Figure 1-14

3) Press the ✳ key to return to the standard screen.

* The position is where the numbers are placed in the numbering mode (p. 1-16); therefore, the Set/Group number and numbering modes cannot be selected at the same time.

7. Character/Image Priority Selection

If the characters overlap with the the image of the document, the image on such sections can be erased to give priority to the characters.

1) Press the ✳ , 7 and ✳ keys in sequence.
2) Press the ↓ key to select '2: Characters Over Image.'

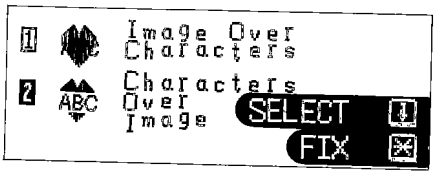

Figure 1-15

3) Press the ✳ key to return to the standard screen.

Note:
If an area is designated, characters will not be given priority even if this mode is selected.

8. Left/Right Margin Selection

The location of the margin (left or right side) may be selected for the margin mode (p. 1-16). The copy priority (left or right page) may also be selected for the two-page separation mode (p. 1-17).

1) Press the ✳ , 8 , and ✳ keys in sequence. (See Note.)
2) Press the ↓ key to select the right margin.

Note:
For NP-4835S/4335, ✳, 5, and ✳.

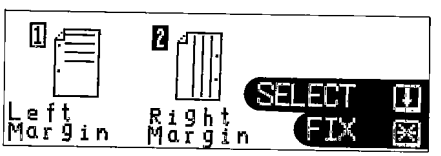

Figure 1-16

3) Press the ✳ key to return to the standard screen.

Note:
Standard is the left margin. Choose the right margin for books that start on the right.

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9. Daily Off

The time at which the copier will be automatically turned OFF may be set for each day of the week from Monday through Sunday.

1) Press the [*], [9], and [*] keys in sequence. (See Note.)

Note:
For NP-4835S/4335, [*], [6], and [↓].

- Perform the following to turn the copier OFF at 16:45 on Monday.

2) Press the [1], [6], and [#] keys in sequence. (See Note.)
3) Press the [4], [5], and [#] keys in sequence.

To set the timer for Tuesday onward, repeat the foregoing steps in sequence.

4) Press the [*] key to return to the standard screen.

Note:
- 1:00 pm must be set as 13:00; 2:00 pm as 14:00 etc.
- For days the copier should not be turned OFF, set the timer to '00:00'.
- The daily shut-off and auto shut-off mechanisms will not work while the machine is in operation or when the auto-clear timer is activated.

10. Setting the Auto-Clear Time

The auto-clear time can be set between one minute to nine minutes in one-minute increment. Setting it to zero cancels the feature.

1) Press [*], [1], [0], and [*] keys in sequence. (See Note.)

Note:
For NP-4835S/4335, [*], [7], and [*].

- For example, perform the following to set the auto-clear time to five minutes.

2) Press the [5] key.
3) Press the [*] key to return to the standard screen.

11. Time Adjustment

The built-in clock can be set for year, month, day, day of the week, and time.

1) Press the [*], [1], [1] and [*] keys in sequence. (See Note.)
2) Use the [↓] and [↑] keys and [#] key to set the year, month, day, and time.

Note:
For NP-4835S/4335, [*], [8], and [*].

- For example, perform the following to set Saturday, November 12, 1989, 12:20.
  1 Press the [↓] and [↑] keys to set '19', which is the first two numerals representing the year 1989. Press the [#] key.
  2 Set '89' to complete '1989'.
  3 Set '11' to represent the month.
  4 Set '12' to represent the day.
  5 Set 'SUN' to represent the day of the week.
  6 Set '12' to represent the hour.
  7 Set '20' to represent the minute.

3) Check the input, and press the [*] key to return to the standard mode.

12. Double Mode Memory (NP-4835 only)

With this feature, the modes stored under memory keys [M1] and [M2] can be combined for a single copy.

Note:
If a CD unit changer is used, 4-color framing can be used on a copy by storing the 2-color framing mode under each.

Note:
1. Copies are made on a single copy basis.
2. No feeder can be used.
3. The two-page separation mode is not effective.
4. The number of areas that can be designated is limited to eight for the two memories combined.

1) Press the [*], [1], [2], and [*] keys in sequence.
2) Press the [↓] key to select '[2]: ON.'

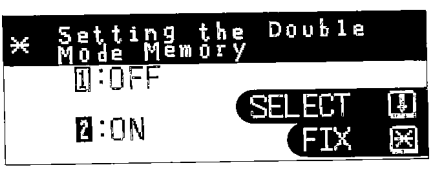

Figure 1-17

3) Press the [#] key to return to the standard screen.

13. Mode Memory

Up to three copy modes desired may be stored in memory.

1) Set the copy mode desired on the control panel.
2) Press the [*] key.
3) Press any one of the copy mode memory keys ([M1], [M2] or [M3]).
4) Press the [#] key to store the copy mode.

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- Recalling the Copy Mode
  Press the copy mode memory key under which the copy mode desired is stored.

Note:
1. The memory is intact even after the copier is turned OFF.
2. For character input, only the M1 key is effective.

14. ID Mode

In this mode, copies cannot be made unless a 4-digit ID No. (pre-registered) is entered. Up to 25 ID Nos. can be registered, and counts (of copies made) can be obtained for each ID No. for keeping copy operation under control over each group.

- Registering ID Nos.

1) Press the ✳, ID, AUTO ZOOM, and ✳ keys in sequence.

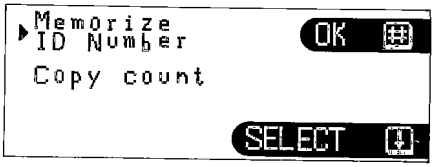

Figure 1-18

2) Press the # key, and enter a 4-digit ID No. with the number keys.
3) Press the ✳ key to return to the standard screen.

Note:
To clear the ID No., enter '0000'.

- Entering ID Nos.

1) Turn the copier ON.
2) Enter an ID No. using the number keys.

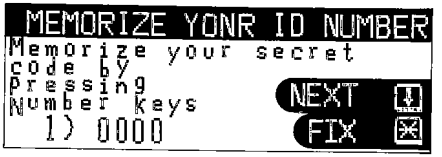

Figure 1-19

3) Press the ID key.
4) Start copying.
5) Press the ID key upon completion of the copy operation.
   Copy operation will not start unless an ID No. is entered once again.

- Copy Control
  The count (total number of copies made) may be displayed for each ID No. or printed out.

Note:
For NP-4835S/4335, no print out on copy paper.

1) Press the ✳, ID, AUTO ZOOM SELECT, ✳, and ↓ keys.

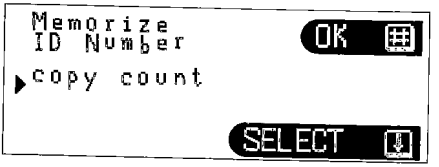

Figure 1-20

2) Press the # key.

- Checking the Count for Each ID No.

3) Press the ↓ key to indicate the count for the first ID No.

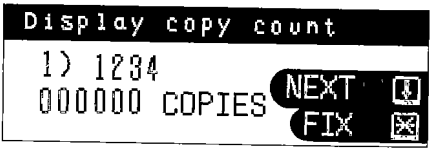

Figure 1-21

4) Press the ↓ key to indicate the count of ID Nos. that follow.

- Printing Out the Counts of All ID Nos. (NP-4835 only)

5) Press the START key, to obtain a printout.

Note:
Be sure to set A4 size paper in the cassette.

- Clearing the Counts of All ID Nos. (resetting)

6) Press the CLEAR key.

Note:
Copy counts of ID Nos. cannot be cleared individually.

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15. STAMP Cover/All Pages Selection (NP-4835i only)

In the stamp mode, the desired stamp may appear on the cover (1st page) only or on all the pages.

1) Press the [*], [1], [2], and [*] keys in sequence.
2) Press the [↓] key to select 'COVER' or 'ALL PAGES'.

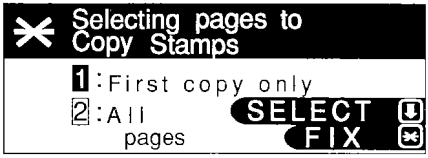

Figure 1-17a

3) Press the [*] key to return to the standards screen.

Note:

i. When 'ALL PAGES' is selected, '*' is indicated.
ii. A press on the RESET key automatically selects 'COVER'.

16. CHARACTER INPUT Cover/All Pages Selection (NP-4835i only)

In the character input mode, the desired characters may appear on the cover (1st page) only or on all the pages.

1) Press the [*], 1, 3, and [*] keys in sequence.
2) Press the [↓] key to select 'COVER' or 'ALL PAGES'.

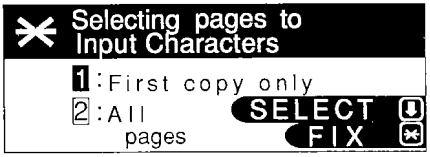

Figure 1-17b

3) Press the [*] key to return to the standard screen.

Note:

i. When 'ALL PAGES' is selected, '*' is indicated.
ii. A press on the RESET key automatically selects 'COVER'.

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Guide to Asterisk Modes (For NP-4835/4835i)

	Key operation	Mode	Description
1	[*] → [1] → [*]	Zoom program	Calculates and sets reproduction ratio in response to input of document and copy sizes.
2	[*] → [2] → [*]	Headline input	Registers messages in headline (accepts input from cordless pen when used with editor).
3	[*] → [3] → [*]	Density recalibration	Corrects copy density for automatic/manual exposure.
4	[*] → [4] → [*]	Copying different size originals	Enables mixing of documents of different sizes in feeder (A3 and A4, B4 and B5; 11″ × 17″ and LTR for 115V model).
5	[*] → [5] → [*]	Counting originals automatically (feeder)	When making two-sided copies from one-sided originals set in the feeder, the originals are counted automatically; * 5 * cancels the count.
6	[*] → [6] → [*]	Set/Group number	Sets number of copies. Output position is same as in numbering mode; not effective in numbering mode.
7	[*] → [7] → [*]	Character/image priority selection	Selects output of character input mode. May be either of the following; standard is 2: 1. Outputs characters with background image erased. 2. Outputs characters over background image.
8	[*] → [8] → [*]	Left/Right margin selection	Selects left or right margin; standard is 1: 1. Left/Right margin; two-page separation scanning from left to right. 2. Right/Left margin; two-page separation scanning from right to left.
9	[*] → [9] → [*]	Daily off	Sets daily copier OFF time for a week (Mon. thru Sun.).
10	[*] → [1] → [0] → [*]	Setting auto clear time	Adjustable between 0 min to 9 min in 1-min increment. Not effective if set to 0; standard is 2 min.
11	[*] → [1] → [1] → [*]	Time adjustment	Sets built-in clock. Enters year, month, day, day of week.
12	[*] → [1] → [2] → [*]	Double mode memory	Modes under M1 and M2 keys may be used together on single copy.
13	M1 [*] → M2 → [*] M3	Mode memory	Stores up to three copy modes desired.
14	[*] → ID → AUTOZOOM → [*]	ID mode	• Registers 4-digit ID Nos., and enables copy operation only upon input of the ID Nos. • Up to 25 ID Nos. may be registered, and number of copies made may be printed out on hard copy as a record.
※ 15	[*] → [1] → [2] → [*]	ST AMP cover/ all pages selection	Selects either of the following (default, 1): 1. Output of the stamp on the cover only. 2. Output of the stamp on all pages.
※ 16	[*] → [1] → [3] → [*]	CHARACTER INPUT cover/all pages selection	Selects either of the following (default, 1): 1. Output of characters on the cover only. 2. Output of characters on all pages.

※ NP-4835i only

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Guide to Asterisk Modes (For NP-4835S/4335)

	Key operation	Mode	Description
1	✳ → 1 → ✳	Zoom program	Calculates and sets reproduction ratio in response to input of document and copy sizes.
2	✳ → 2 → ✳	Density recalibration	Corrects copy density for automatic/manual exposure.
3	✳ → 3 → ✳	Copying different size originals	Enables mixing of documents of different sizes in feeder (A3 and A4, B4 and B5; 11″ × 17″ and LTR for 115V model).
4	✳ → 4 → ✳	Counting originals automatically (feeder)	When making two-sided copies from one-sided originals set in the feeder, the originals are counted automatically; ✳ 4 ✳ cancels the count.
5	✳ → 5 → ✳	Left/Right margin selection	Selects left or right margin; standard is 1: 1. Left/Right margin; two-page separation scanning from left to right. 2. Right/Left margin; two-page separation scanning from right to left.
6	✳ → 6 → ✳	Daily off	Sets daily copier OFF time for a week (Mon. thru Sun.).
7	✳ → 7 → ✳	Setting auto clear time	Adjustable between 0 min to 9 min in 1-min increment. Not effective if set to 0; standard is 2 min.
8	✳ → 8 → ✳	Time adjustment	Sets built-in clock. Enters year, month, day, day of week.
9	✳ → M1 / M2 / M3 → ✳	Mode memory	Stores up to three copy modes desired.
10	✳ → ID → AUTOZOOM → ✳	ID mode	• Registers 4-digit ID Nos., and enables copy operation only upon input of the ID Nos. • Up to 25 ID Nos. may be registered, and number of copies made may be printed out on hard copy as a record.

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V. WARNINGS AND REQUIRED ACTION

A. 'JAM'

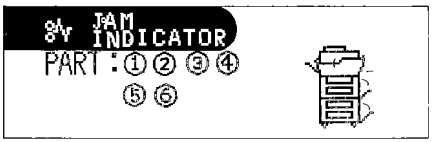

Figure 1-22

The message appears when there is a paper jam in the copier. Perform the following to remove the jam.

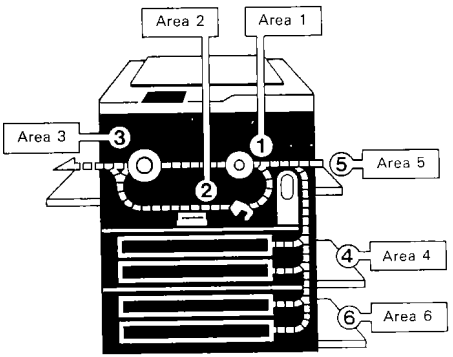

Figure 1-23

1. If lamp 1 (Area 1) lights, perform the following:
   1) Turn the feeder unit release lever counterclockwise, and remove the jam.

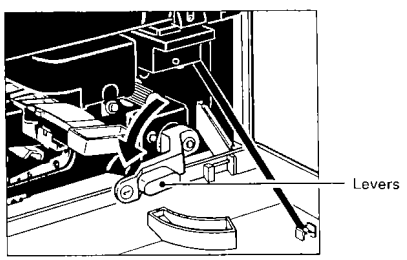

Figure 1-24

2. If lamp 2 (Area 2) lights, perform the following:
   1) Push the levers of the lower feeder unit up, and remove the jam.

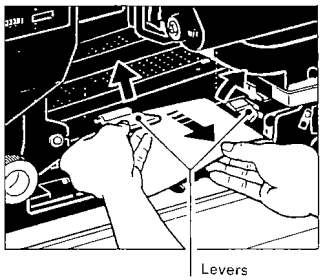

Figure 1-25

3. If lamp 3 (Area 3) lights,
   1) Remove the delivery tray, and open the delivery door. If the paper is trapped in the fixing assembly, turn the fixing assembly knob counterclockwise, and remove the jam.

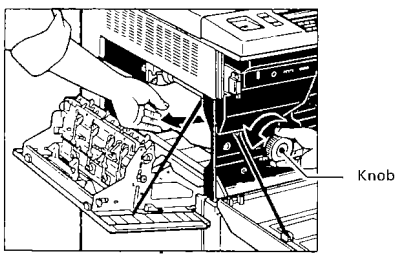

Figure 1-26

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4. If lamp 4 (Area 4) lights, perform the following:
   1) Open the upper right door of the cassette holder, and remove the jam. If this is not possible, pull out the cassette.

5. If lamp 5 (Area 5) lights, perform the following.
   1) Lift the manual feeder tray cover, and remove the jam.

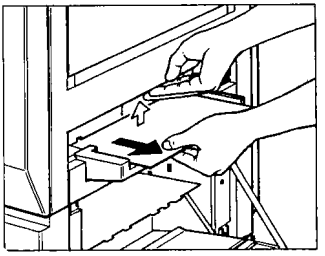

Figure 1-27

6. If lamp 6 (Area 6) lights, perform the following:
   1) Open the lower right door of the cassette holder, and remove the jam. If this is not possible, pull out the cassette.

B. 'ADD PAPER'

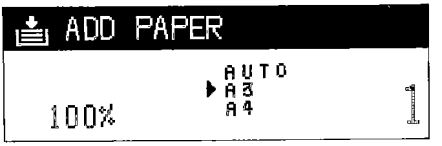

Figure 1-28

The message appears when the cassettes have run out of paper. Set paper as follows:
1) Hold the handle of the cassette selected, and pull it until it stops.
2) Unwrap fresh copy paper, and hold the stack of paper face down.

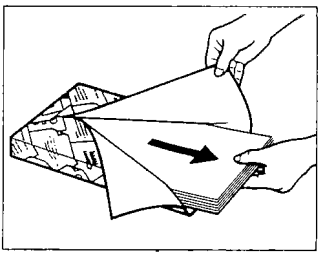

Figure 1-29

3) Place the paper on the plate of the cassette, and arrange the edges of the sheets in order.

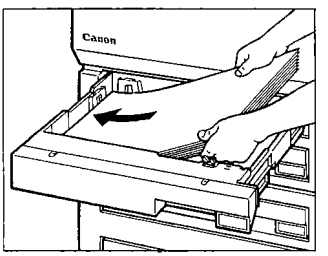

Figure 1-30

4) Set the cassette in the copier.

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C. 'Adding Toner'

1. Adding Black Toner

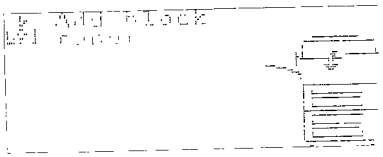

Figure 1-31

The message appears when the black toner has run out. Perform the following:

1) Open the front door.
2) Pull the hopper unit toward the front.
3) Open the upper cover of the hopper unit.

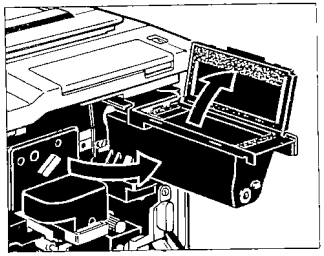

Figure 1-32

4) Check the new toner cartridge for toner color, and shake it side to side about ten times.

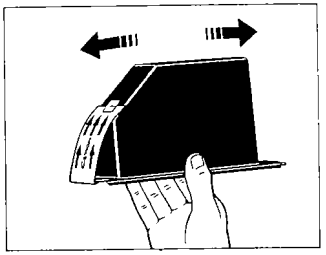

Figure 1-33

5) Keep the end of the toner cartridge against the groove at the rear of the hopper unit and, while holding the cartridge with one hand, pull out the seal with care.

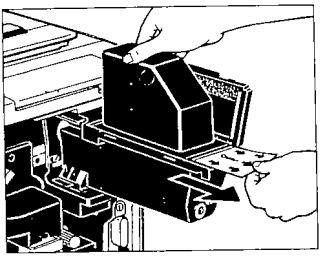

Figure 1-34

6) Tap lightly on the top of the toner cartridge until all toner in the cartridge falls inside the hopper unit.
7) Detach the toner cartridge with care.
8) Close the upper cover of the hopper unit.
9) Set the hopper unit in the copier.
10) Close the front door.

Note:
See CHAPTER 5 for supply of black toner at time of copier installation.

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2. Adding Color Toner
(NP-4835/4835i only)

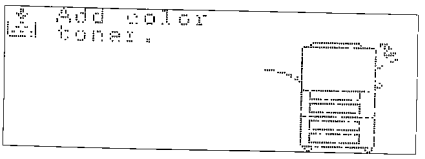
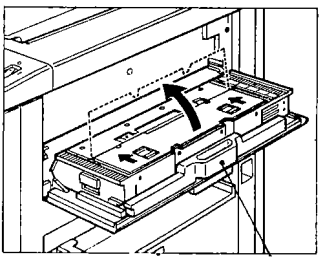


Figure 1-35

The message appears when the color toner has run out. Check the color, and perform the following:

1) Open the CD unit door of the copier.
2) Hold the grip, and pull the CD unit outside.
3) Open the toner supply cover of the CD unit.



Grip

Figure 1-36

4) Check the new toner cartridge for color, and shake it side to side about ten times.
5) Keep the toner cartridge in contact with the CD unit and, while holding the cartridge with one hand, peel the seal with care.
6) Tap lightly on the top of the toner cartridge until all toner inside the cartridge falls into the hopper unit.
7) Pick the toner cartridge with fingers, and remove it with care.
8) Close the toner supply cover, and lock the CD unit.
9) Set the CD unit in the copier.

VI. ROUTINE INSPECTION BY THE CUSTOMER

Instruct the customer to clean the following at least once a week.

a. Copyboard glass.
Wipe it with a moist cloth and then with a dry cloth.
b. Copyboard cover.
Wipe it with mild detergent solution and with a dry cloth.
c. Primary and Transfer/Separation corona units.
Slide the units out and in several times to clean the corona wires.

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VII. LASER BEAM SAFETY (NP-4835/4835i only)

A. Safety

This copier has been approved as Class 1 equipment according to the radiation performance standards issued by the US Department of Health and Human services (DHHS) in 1968.

This means that this copier does not produce harmful laser beams.

The laser scanner of this copier is completely enclosed by the protective housing and the external cover, so there is no possibility of laser beam leakage while the user is operating the copier.

B. CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the US Food and Drug Administration issued regulations on equipment using lasers on August 2, 1976.

The regulations apply to all equipment using lasers manufactured after August 1, 1976, and prohibit sale of equipment not complying with them within the United States.

Figure 1-37 shows the label indicating compliance with the CDRH regulations which must be attached to equipment for sale in the United States.

CANON INC.
3-30-2 SHIMOMARUKO, OHTA-KU, TOKYO, JAPAN
CANON U.S.A., INC
ONE CANON PLAZA, LAKE SUCCESS, N Y 11042, U.S A
CANON CANADA INC.
3245 AMERICAN DRIVE, MISSISSAUGA, ONTARIO
L4V 1N4, CANADA.
MANUFACTURED:
THIS PRODUCT CONFORMS WITH DHHS RADIATION PERFORMANCE STANDARD, 21CFR CHAPTER 1 SUBCHAPTER J

Figure 1-37

Note:
The text may vary in parts for different product models.

C. Laser Unit Operation

Particular care should be taken when performing maintenance around the laser scanner unit to avoid inserting tools, such as screwdrivers, with high reflectance directly into the laser beam path.

Watches, rings, etc., should be removed before beginning operation to avoid the danger of reflecting the laser beam into the eyes.

The laser beam is invisible, so special care should be taken when performing maintenance or inspection under the cover to which the label shown in Figure 1-38 is attached.

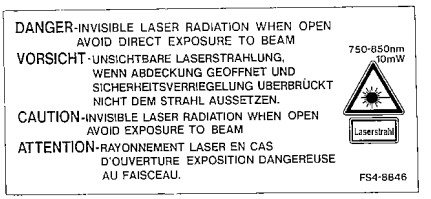

Figure 1-38

I. IMAGE FORMATION PROCESS

■ NP-4835/4835i

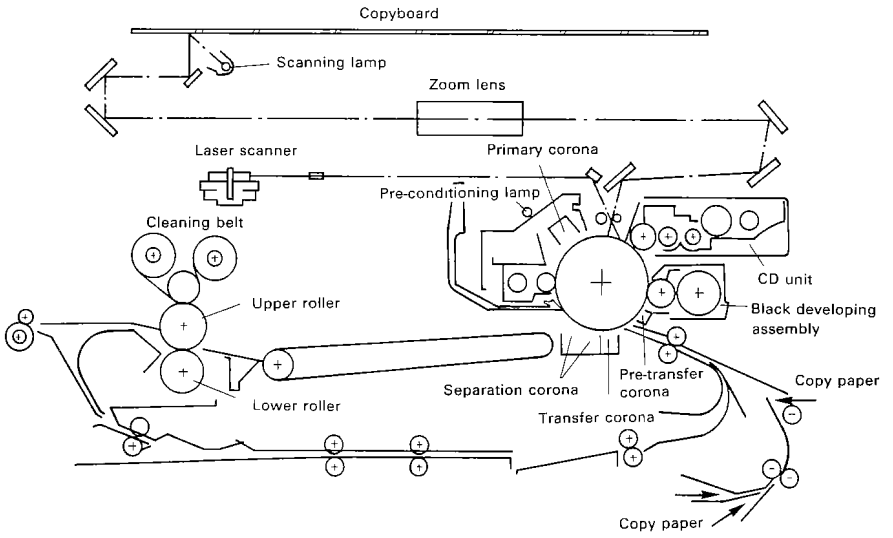

Figure 2-1

■ NP-4835S/4335

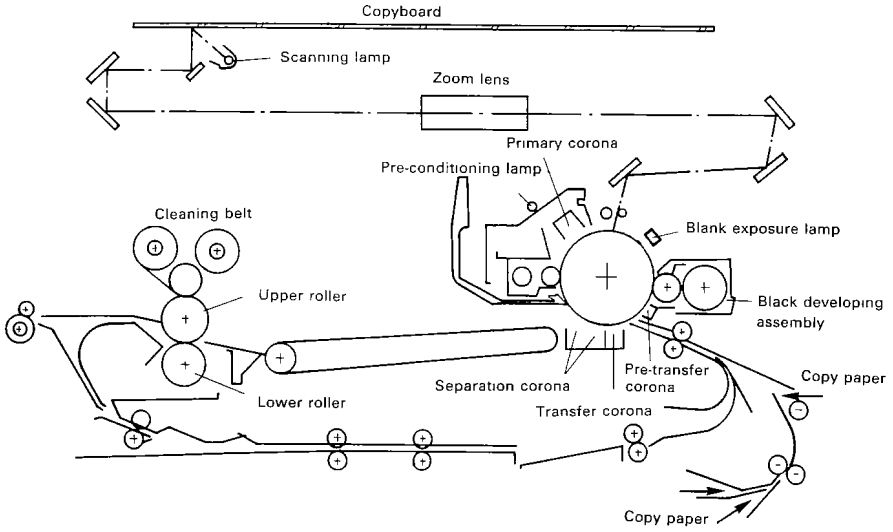

Figure 2-1A

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The copier is an electrophotographic copier equipped with a photosensitive drum. See Figures 2-1 and 2-1A for its construction.

Figure 2-2 is a sequential diagram which shows how steps involved in forming images are related to each other.

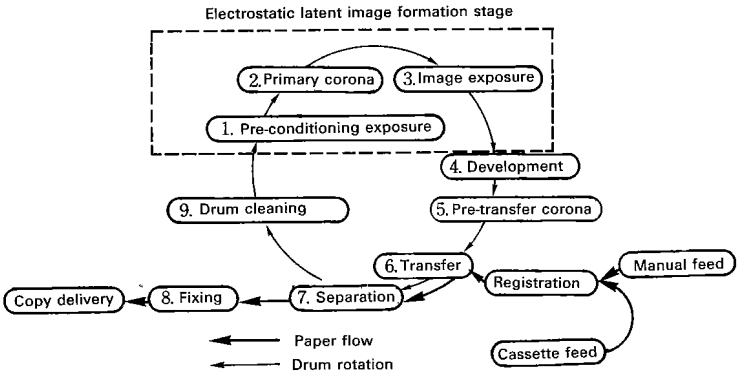

Figure 2-2

Images are formed in the following nine steps.

Step 1 Pre-conditioning exposure
Step 2 Primary corona (negative DC)
Step 3 Image exposure
Step 4 Development (AC and negative DC bias)
Step 5 Pre-transfer corona (AC and positive DC)
Step 6 Transfer corona (negative DC)
Step 7 Separation corona (AC and positive DC)
Step 8 Fixing
Step 9 Drum cleaning

The photosensitive drum is of a seamless type and of a two-layer construction; its outer layer is made of organic photoconductor (OPC), and the inner layer is an aluminum base made of conducting material.

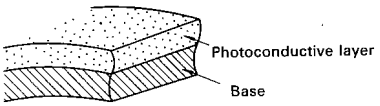

Figure 2-3

Formation of Electrostatic Latent Image

This block consists of the first three steps of the image formation process; at its end, the areas of the drum corresponding to dark areas of the document are left with negative charges, and those representing light areas are rid of negative charges.

The pattern of charges so formed is not visible to the human eye and, therefore, is called an "electrostatic latent image."

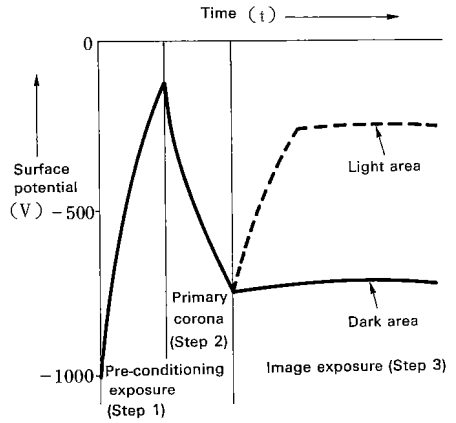

Figure 2-4

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Step 1 Pre-conditioning exposure

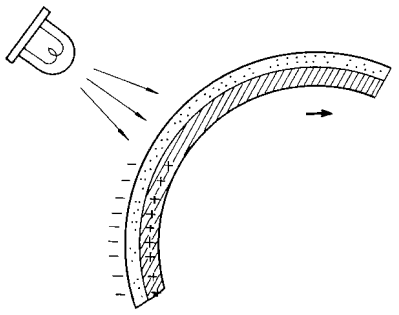

Figure 2-5

In this step, or pre-conditioning exposure, the surface of the drum is exposed to light from the pre-conditioning exposure lamp. All charges remaining on the surface of the drum from the preceding copy cycle are eliminated in preparation for exposure by the primary corona. Such charges, if left as they are, could result in copies with uneven density.

Step 2 Primary corona

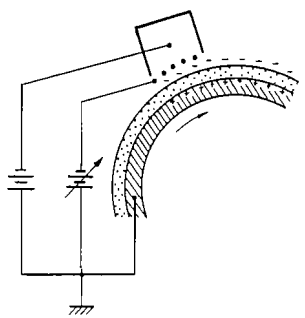

Figure 2-6

In this step, the drum is exposed by the primary corona. As a result, its surface will come to have a uniform layer of negative charges and maintain primary potential.

The surface potential of the drum is determined by the value of the grid bias.

Step 3 Image exposure

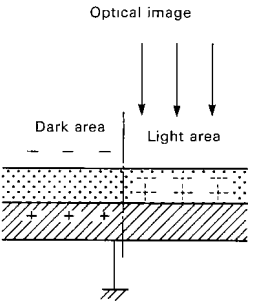

Figure 2-7

In this step, the optical image of the document is projected on the surface of the drum to neutralize the charges in light areas.

Step 4 Development

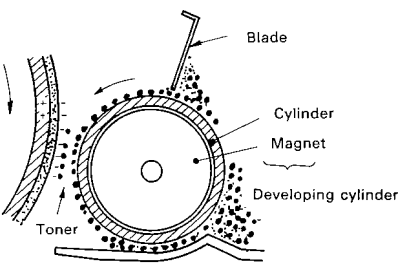

Figure 2-8

As shown in Figure 2-8, the developing assembly consists of a developing cylinder and a magnetic blade; the developing cylinder itself is made up of a magnet fixed in position and a cylinder which rotates around the magnet.

The black developer is a single-component developer of magnetite and resin. The developer has insulating properties and is charged to a positive potential by friction with the rotating cylinder.

The color developer is a fixed-ratio mixture of carrier (iron powder) and toner (resin).

By friction with the rotating cylinder, the iron powder is charged to a negative potential, and the toner to a positive potential.

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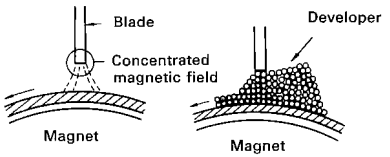

Figure 2-9

A concentrated magnetic field develops between the magnet and the tip of the blade, and the developer is attracted to the magnetic field.

The magnetic field holds the developer it has attracted virtually immobile and creates a collection of developer particles hanging from the tip of the blade. As the cylinder rotates, the developer particles leave the magnetic field to deposit themselves on the cylinder in a thin, uniform layer.

Since both the developing cylinder and the blade are given AC bias and DC bias (negative component) at the same time, the resulting wave form of the developing bias has a larger negative component than positive.

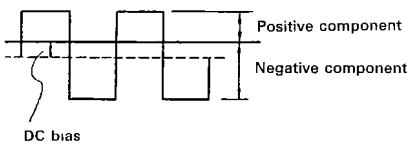

Figure 2-10

During copy operation, the toner is attracted to the drum by the work of the surface potential of the drum and the developing bias (at time of positive component), and it turns the electrostatic latent image to a visible image. The excess toner is repelled by the surface potential of the drum and the developing bias (at time of negative component).

An AC bias, its frequency in particular, primarily affects tone gradation; lower frequency will give better gradation, but more fogging. A DC bias, on the other hand, affects copy density and is also related to fogging; a larger bias, i.e., approaching 0 V, increases the density but, at the same time, causes more fogging.

Step 5 Pre-transfer corona

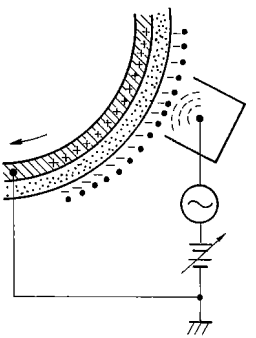

Figure 2-11

In this step, an AC corona discharge in combination with a DC bias optimizes the potential of the toner on the drum surface and, at the same time, eliminates excess charge from the drum surface. This serves to improve transfer efficiency and facilitate separation of the copy paper from the drum.

Step 6 Transfer

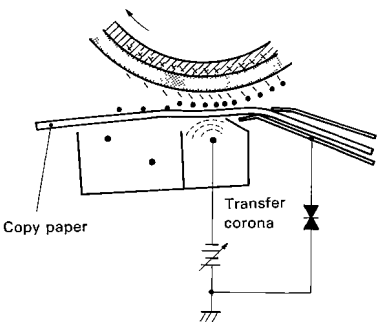

Figure 2-12

In this step, a negative corona is applied to the back of the copy paper so as to attract the positively charged toner to the paper.

To prevent poor transfer or soiling the back of the paper, the transfer guides are grounded through a varistor.

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Note:
If grounded directly, the transfer guides will allow the charge needed on the back of the copy paper to escape; if not grounded, on the other hand, transfer guides will be charged, coated with toner, and become soiled.

Once having left the fixing assembly, the copy paper is dry because of the heat and has a high electrical resistance. For this reason, the transfer corona discharge is reduced during the second copy cycle in the automatic two-sided copy mode or image overlay copy mode to prevent poor separation of the copy paper after transfer.

Step 7 Separation

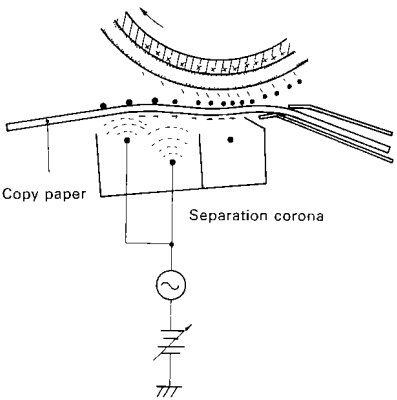

Figure 2-13

Step 7 is where copy is separated from the drum. The copy paper has been given a negative potential by the transfer corona and attracted to the surface of the drum by the work of electrostatic force. To separate the paper from the drum, an AC corona with a DC bias is applied to break the electrostatic force between the drum and the paper.

The copy paper comes out of the fixing assembly has a high resistance and with curl. For this reason, the output of the separation corona discharge is decreased for its positive DC component during the second copy cycle in the automatic two-sided copy mode or image overlay mode to ensure proper separation.

Step 8 Fixing

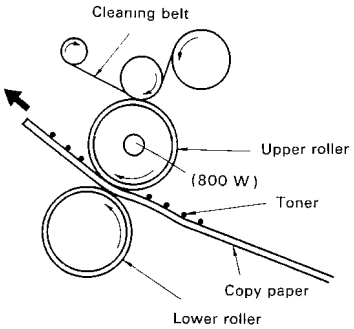

Figure 2-14

In this step, the copy paper carrying a transfer image moves between two heated rollers, and the transfer image is fixed to the paper.

To prevent jams and toner offset, the upper roller remains in contact with a cleaning belt impregnated with silicone oil; the take-up mechanism advances the point of contact on the cleaning belt, thereby cleaning the upper roller and, at the same time, applying the silicone oil.

Step 9 Drum cleaning

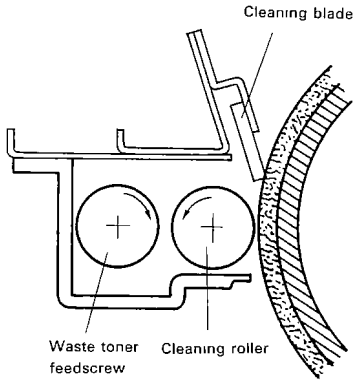

Figure 2-15

In this step, the toner remaining on the drum surface is scraped off by the cleaning blade and collected by the cleaning roller so as to prepare for the next copy cycle.

The toner so collected is forwarded by the waste toner feedscrew for collection inside the drum.

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II. AUXILIARY PROCESSES

1. Separation Claw

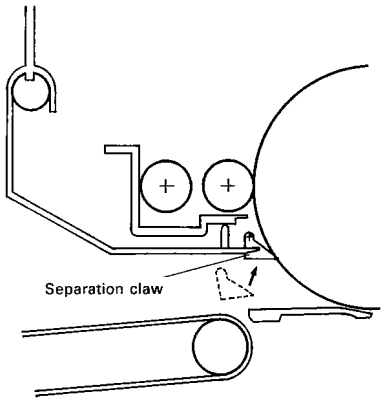

Figure 2-16

The copy paper can advance into the cleaning unit if not separated properly from the drum because of faulty pre-transfer or poor separation corona operation or owing to faulty paper feed. The separation claw is located at the bottom of the cleaning unit and serves to hook off the copy paper, preventing its advance into the cleaning unit.

2. Ozone Filter

The cooling and feeder fan units are equipped with ozone filters, which break down the ozone generated by the coronas into oxygen by catalytic action.

3. Static Charge Eliminator

Prior to delivery copy paper has residual charge picked up at transfer. A steel-wool pad is provided at the exit of the delivery assembly to serve as a static charge eliminator.

4. Laser Exposure/Blank Exposure (LED)

The laser exposure/blank exposure (LED) mechanism serves to remove the potential on the drum corresponding to the non-image area, thereby preventing the adhesion of excess toner on the drum.

In the NP-4835, the blank exposure mechanism (p. 3-28) is executed by means of a laser beam directed on the photosensitive drum.

The NP-4835S/4335, on the other hand, uses an array of LEDs to serve as the blank exposure lamp in meeting the varying non-image area, brought about by the selection of different copy sizes or reproduction ratios.

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I. BASIC OPERATIONS

A. Functional Construction

The copier can be divided into four systems; i.e., paper pick-up and feed system, exposure system, image formation system, and control system.

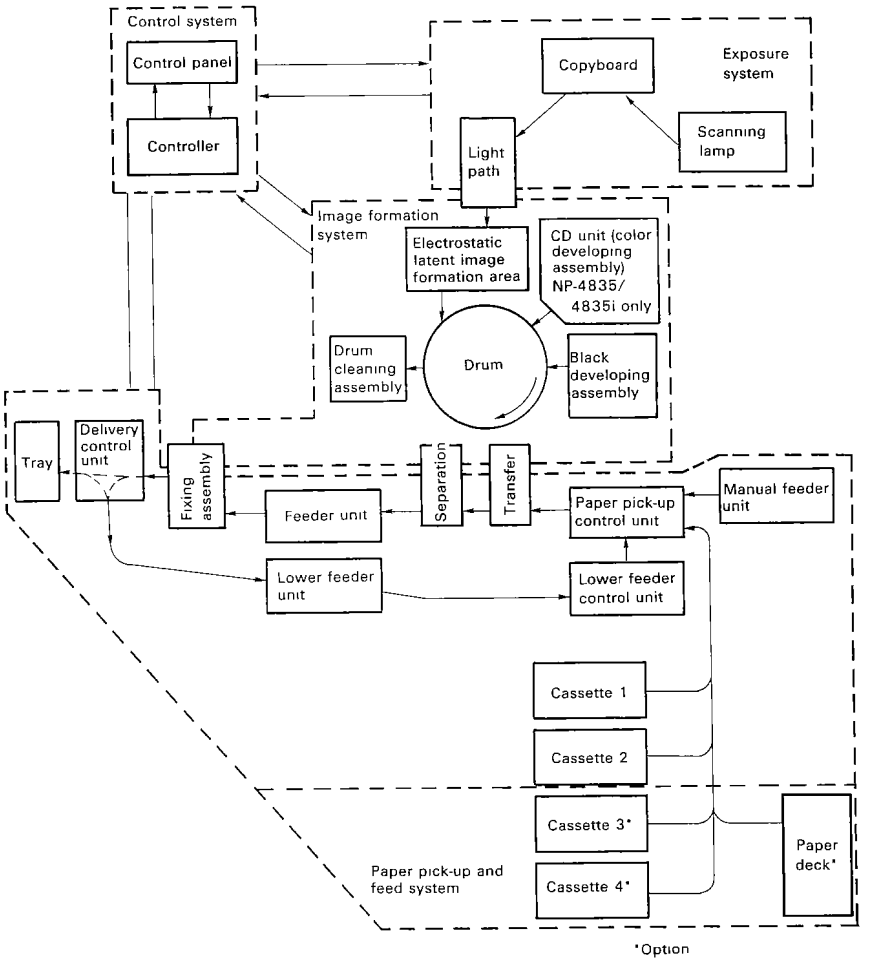

Figure 3-1

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B. Electrical Circuitry

The main electrical control of the copier is performed by four microprocessors and four LSIs on the DC controller PCB. The main functions of each of these ICs are as follows:

Microprocessors

Q101 (main CPU)
- Computer sequence control

Q102 (sub CPU)
- Stepping motor control
- Analog signal read-out

Q105/Q106 (D/A converter)
- Image formation control signal output

LSI

Q103 (LCDC)
- Liquid crystal display control

Q104 (IPC)
- Serial communication control (with feeder, sorter, and editor)

Q115 (LBC) (NP-4835 only)
- Laser beam data generation

Q109 (calendar)
- Calendar control

The main CPU (Q101) has three ROMs (for NP-4835S/4335, two ROMs) and one RAM connected to it, and the RAM is backed up by a lithium battery (BAT101) built into the DC controller PCB. The calendar (Q109), on the other hand, is backed up by a lithium battery (BAT102) outside the DC controller PCB.

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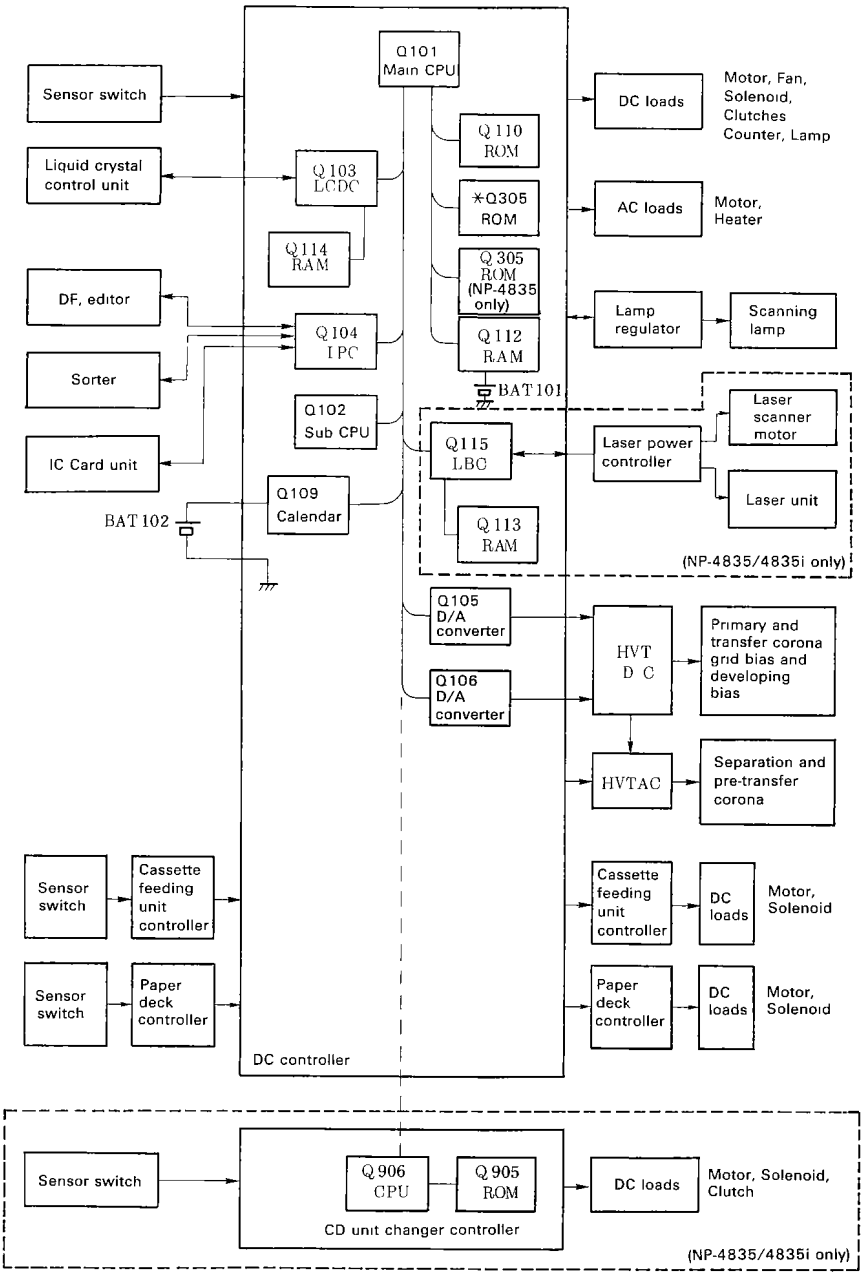

Figure 3-2

※ NP-4835i only.
* NP-4835/4835i only.

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C. DC Controller Input

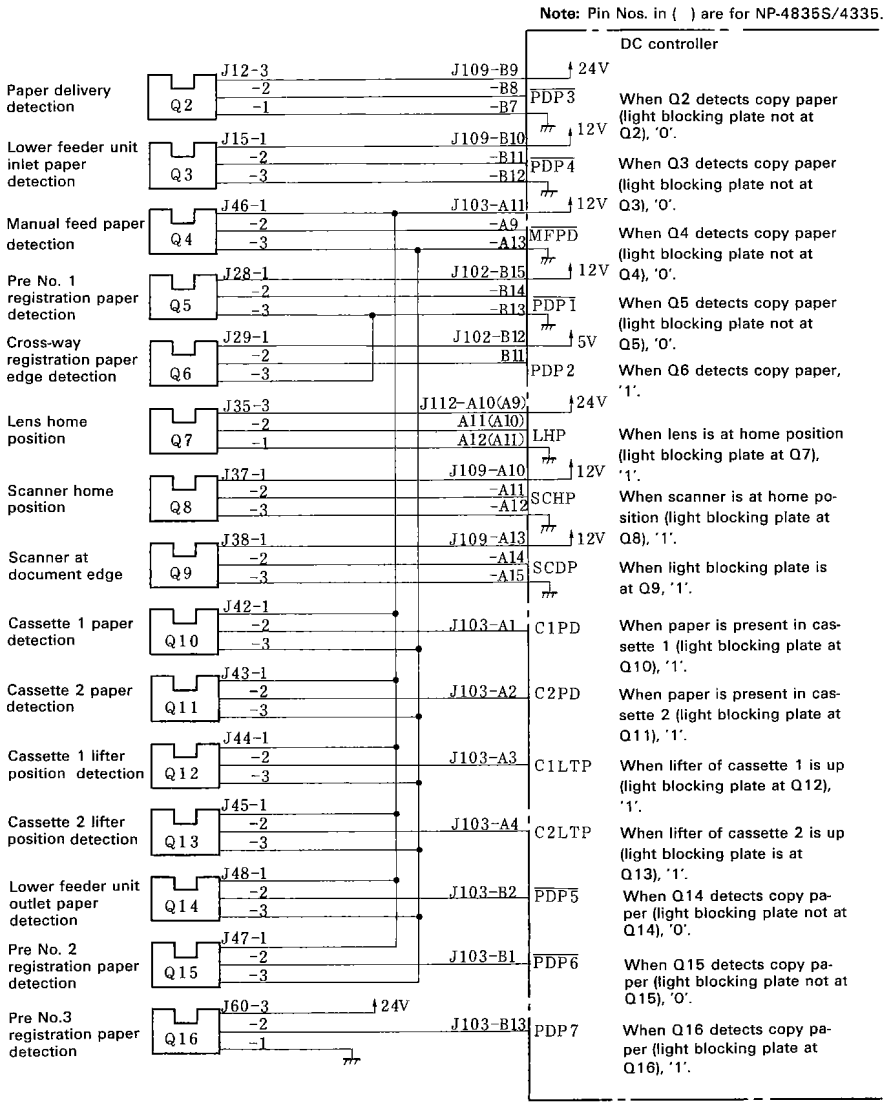

Figure 3-3

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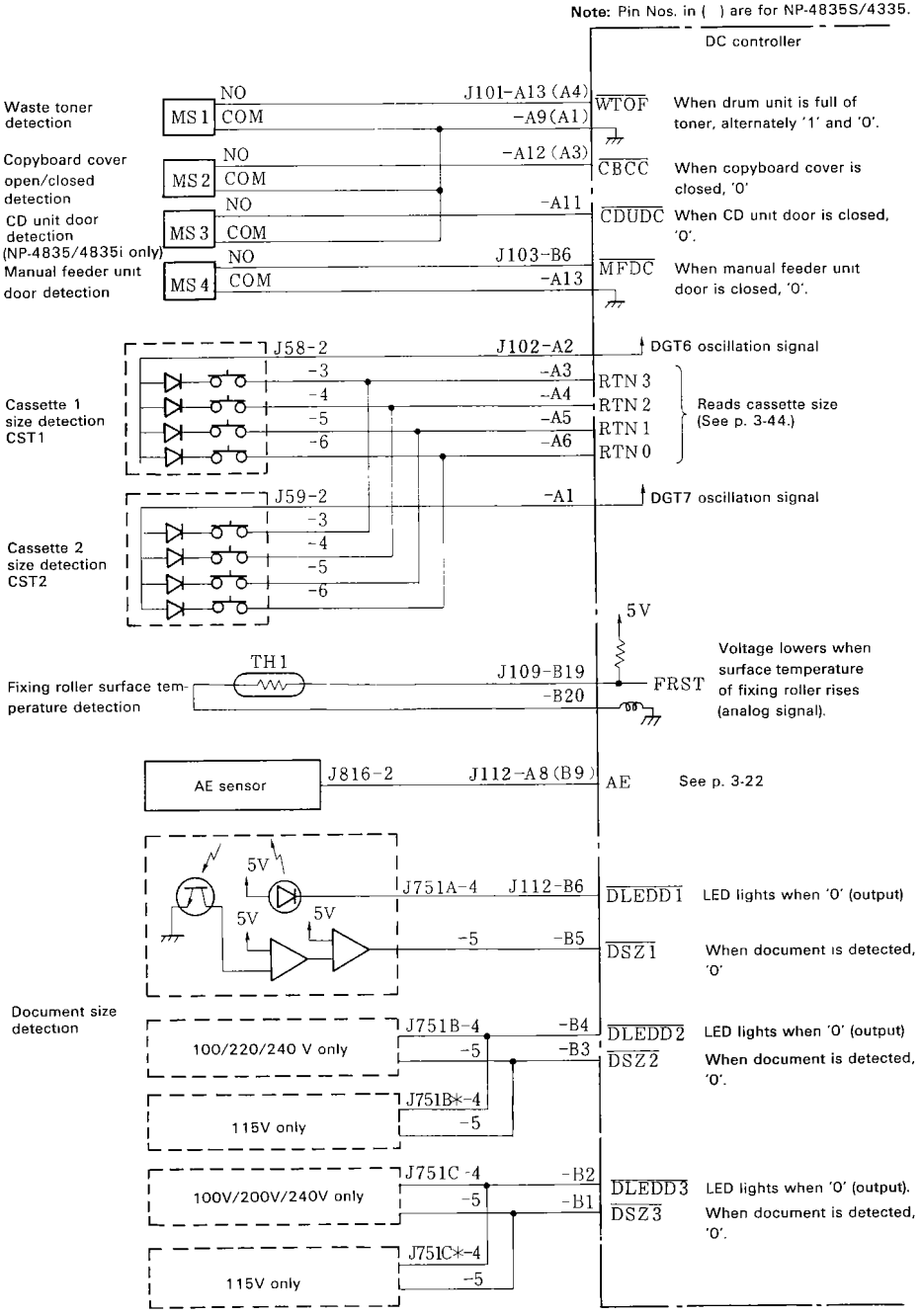

Figure 3-4

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DC Controller Input (continued)

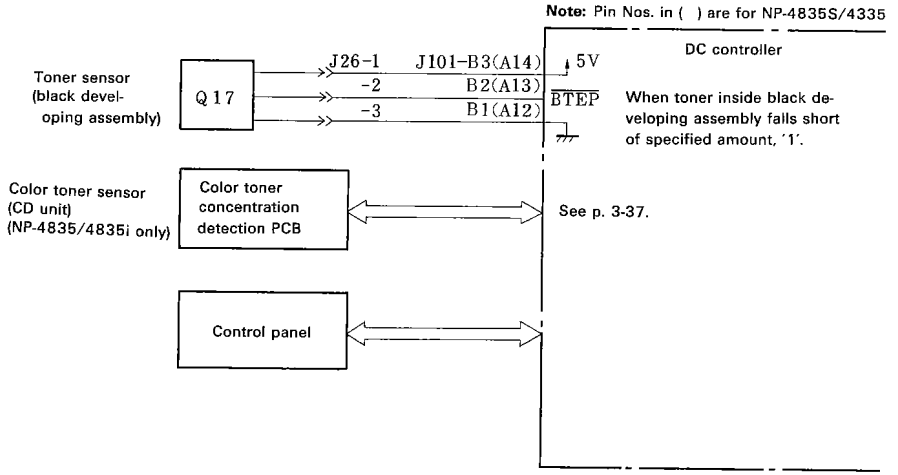

Figure 3-5

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DC Controller Input (cassette feeding unit)

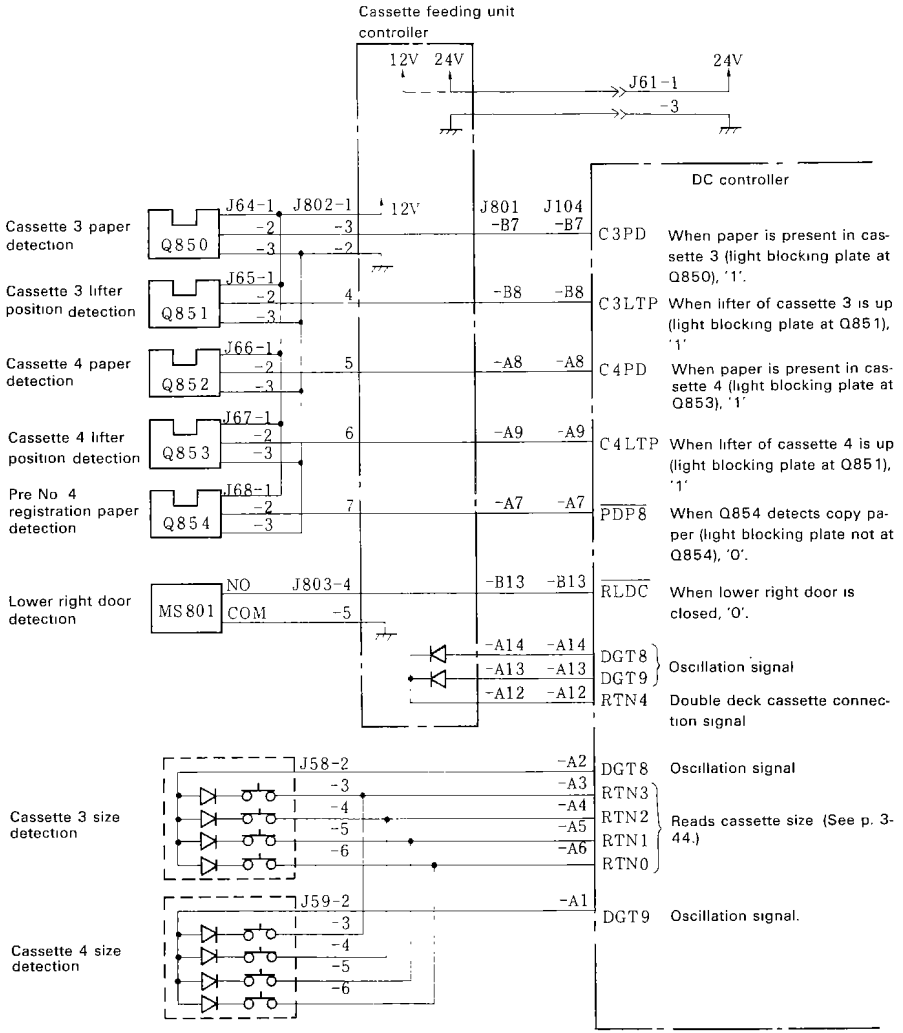

Figure 3-6

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D. DC Controller Output

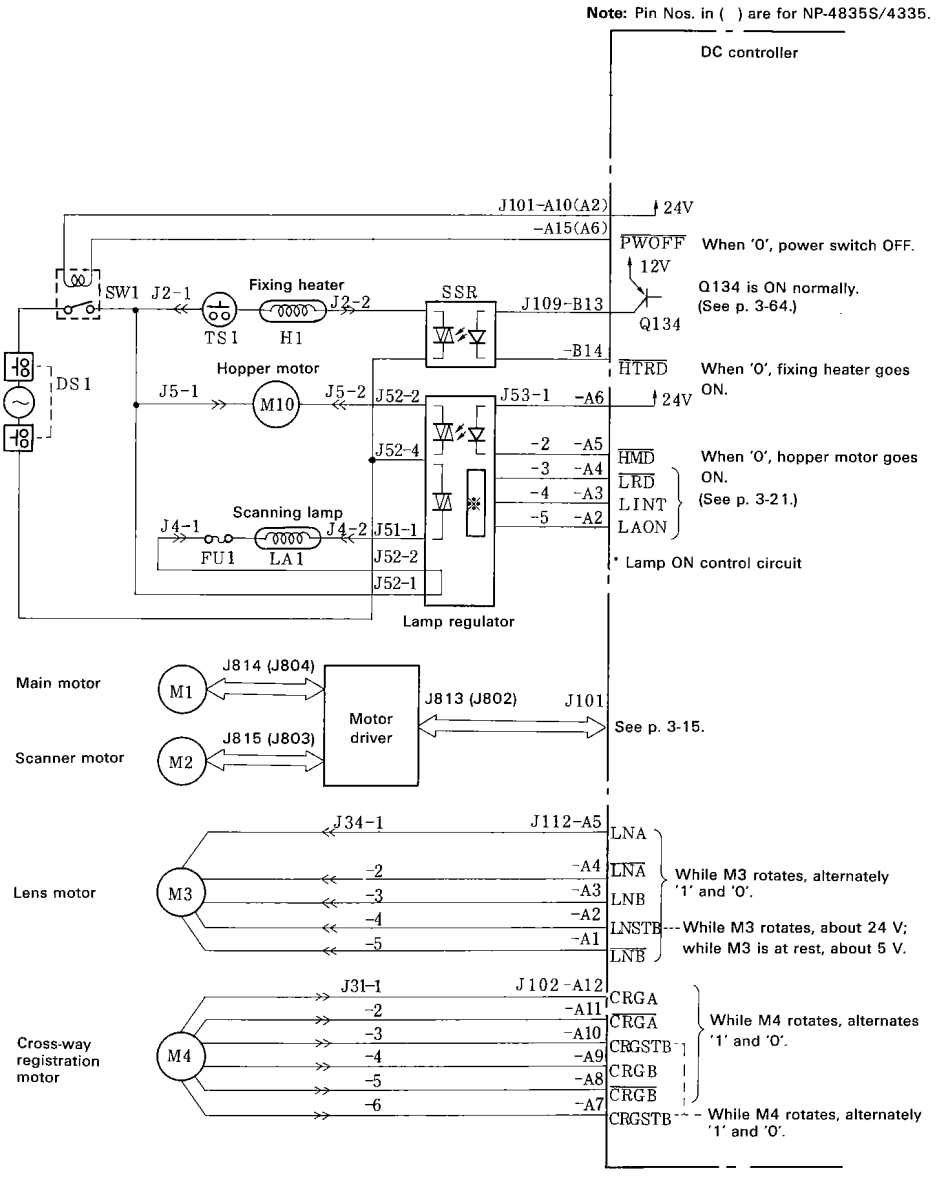

Figure 3-7

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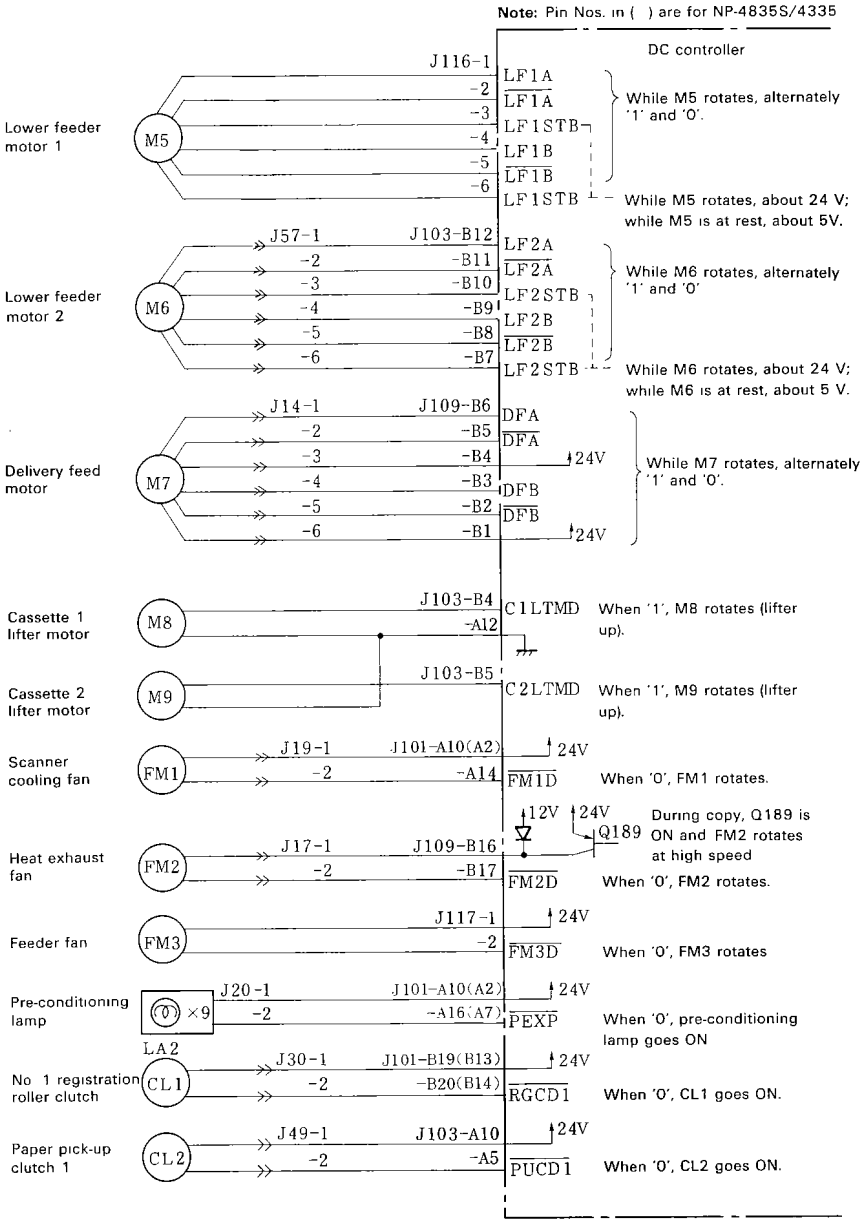

Figure 3-8

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DC Controller Output (continued)

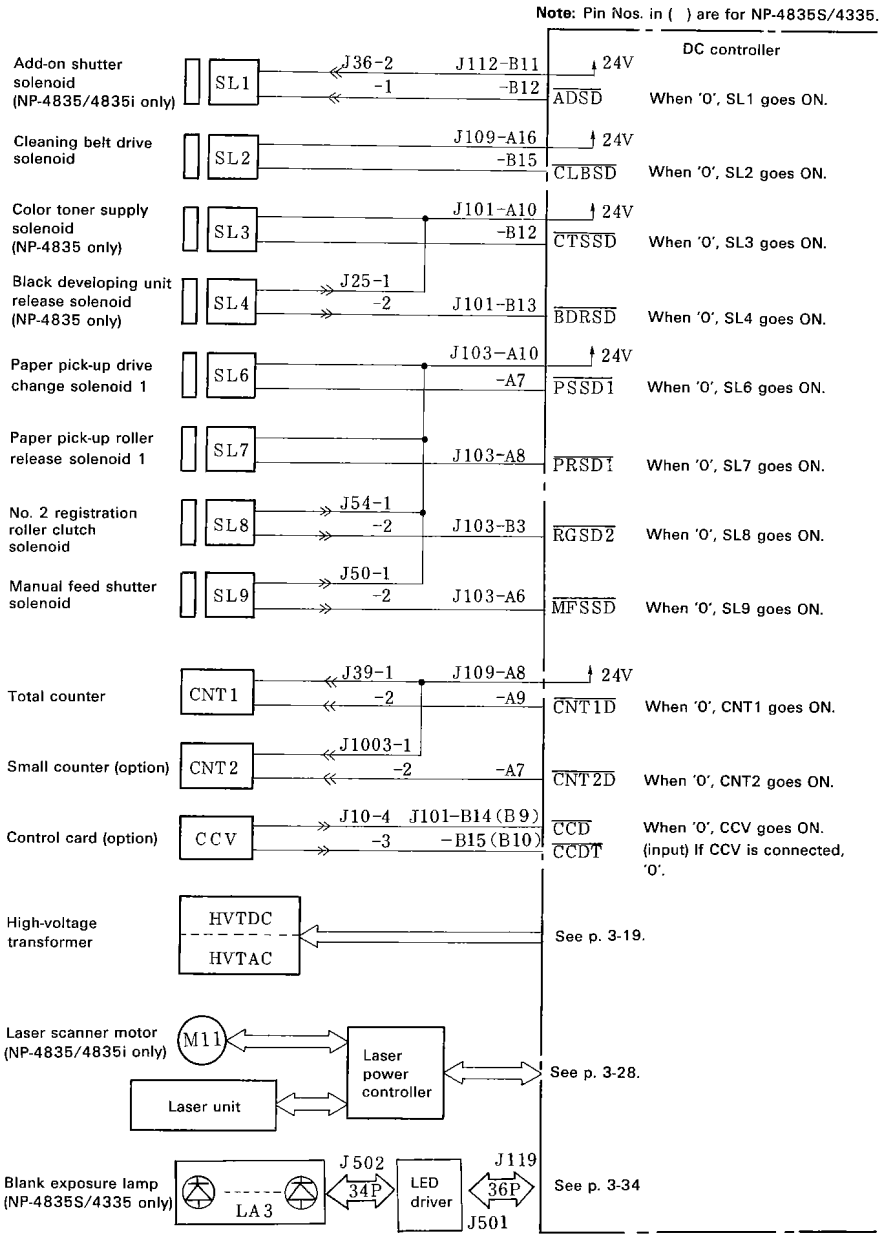

Figure 3-9

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DC Controller Output (cassette feeding unit)

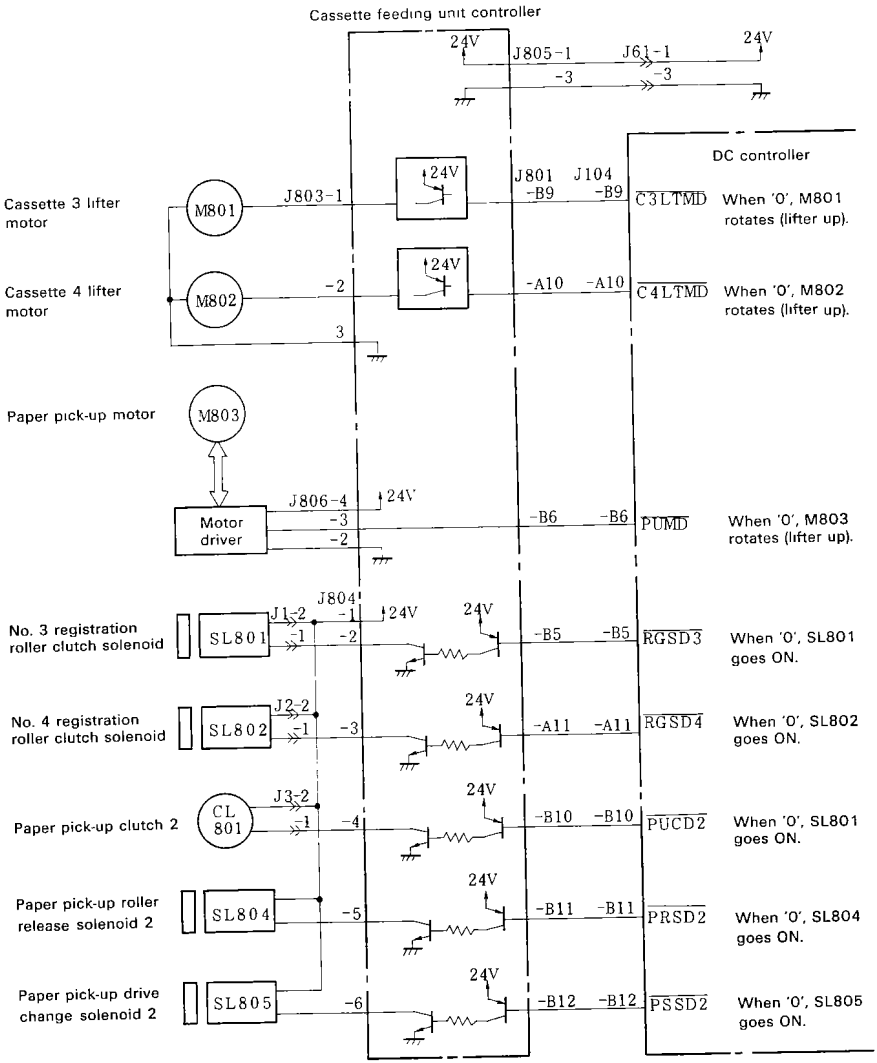

Figure 3-10

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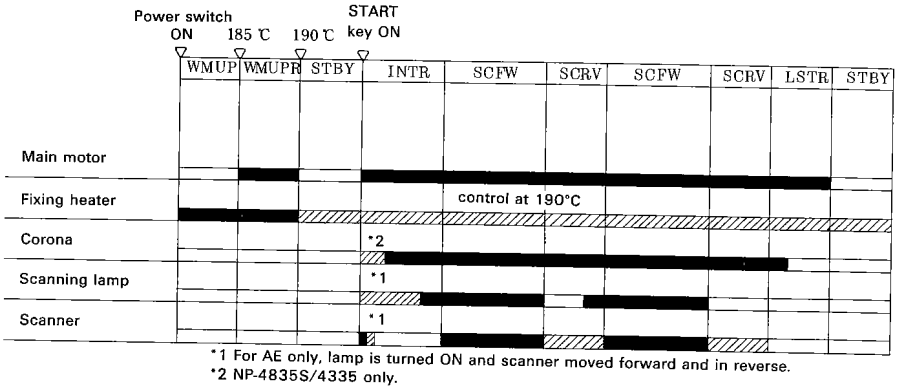
E. Basic Sequence



*1 For AE only, lamp is turned ON and scanner moved forward and in reverse.
*2 NP-4835S/4335 only.

Figure 3-11

Signal	Period	Function	Remarks
WMUP (warm-up)	From power switch ON until fixing roller temperature reaches 185°C	Allows fixing roller to warm up.	Warm-up time varies by fixing roller temperature.
WMUPR (warm-up rotation)	From when fixing roller temperature reaches 185°C until it rises to 190°C (6 sec min.).	Maintains fixing roller temperature constant.	At end of WMUPR, message on display changes from 'WAIT' to 'READY TO COPY'.
INTR (initial rotation)	From when START key is pressed, for 2 sec min.	Stabilizes drum sensitivity in preparation for copy cycle.	
		Moves scanner forward and in reverse about 15mm to measure document density.	AE mode only.
SCFW (scanner forward)	While scanner moves forward. • Forward distance varies by cassette size and reproduction ratio. • Forward speed varies by reproduction ratio selected.	Causes scanning lamp to expose document, and projects reflected light on OPC drum through mirrors and lenses.	Registration signal is generated, and copy paper is fed to transfer assembly.
SCRV (scanner reverse)	While scanner moves in reverse.	Returns scanner to home position in preparation for next copy cycle.	
LSTR (post-rotation)	From end of SCRV until copy paper passes delivery sensor.	Cleans drum surface electrostatically to complete copy cycle.	Ensures delivery of last copy paper.
STBY (standby)	From end of LSTR until START key ON or power switch OFF.	Allows input from START key or other operation key.	Display on control panel returns to standard mode 2 min after end of LSTR.

Table 3-1

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II. EXPOSURE SYSTEM

A. Changing the Reproduction Ratio

The reproduction ratio across the drum is changed by the work of the lens drive system; and that around the drum, by the scanner drive system.

To change the reproduction ratio across the drum, the lens drive system changes the position (focus point) of the lens as shown in Figure 3-12.

To change the reproduction ratio around the drum, the scanner drive system changes the speed of the movement of mirror 1 in relation to the peripheral speed of the drum; i.e., faster for reduction, and slower for enlargement.

Note:
In this copier, mirror-to-mirror relocation is not used to change reproduction ratios.
In the direct copy mode, the speed of mirror 1 is identical to the peripheral speed of the drum.

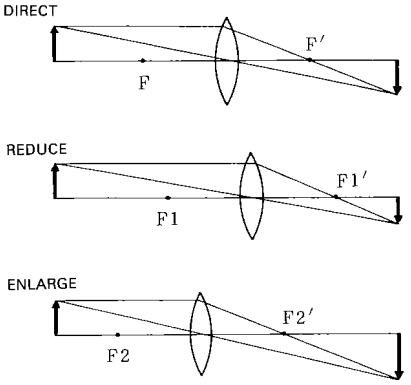
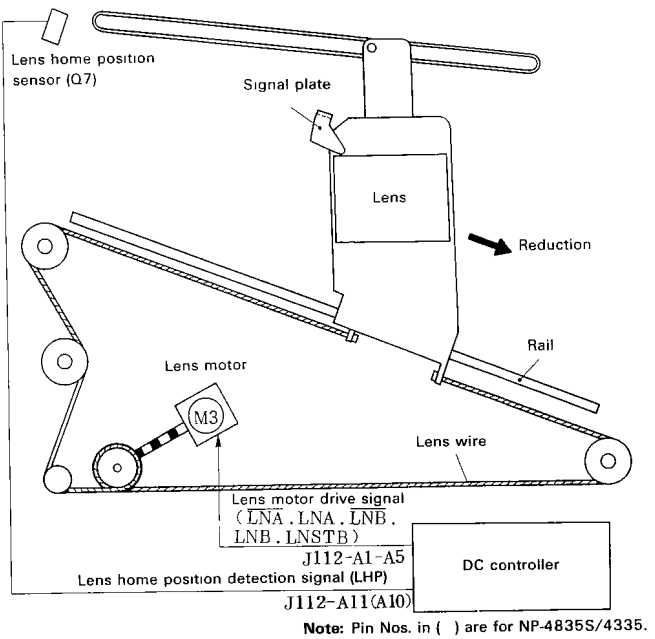


Figure 3-12

B. Lens Drive System



Note: Pin Nos. in ( ) are for NP-4835S/4335.

Figure 3-13

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1. Outline

The lens is driven by the lens motor (M3). When the power switch is turned ON, the motor always rotates in reverse and moves the lens to the point where the signal plate shown in Figure 3-13 blocks the lens home position sensor.

When the lens reaches its home position, the motor shifts to normal rotation. After the signal plate leaves the sensor and so many pulses have been generated, the motor stops, and the lens is set for the direct copy mode.

To move the lens for larger ratios, i.e., from reduction to direct copy, the motor rotates in reverse first, and the lens is moved once past the position corresponding to the ratio selected. The motor then shifts to normal rotation, and the lens is moved back and stopped at the position corresponding to the ratio selected. This way, the lens will be positioned more stably than if stopped with the motor rotating only in reverse.

2. Lens Motor Drive Circuit

The lens motor is a stepping motor and rotates by the work of drive power supply LNSTB and pulse signals LNA, LNA, LNB, and LNB.

With LNSTB being 24 V, pulses given to each phase in sequence cause the motor to rotate.

LNSTB is 5 V while the motor is at rest; and the motor is supplied with current so as to keep the lens in position.

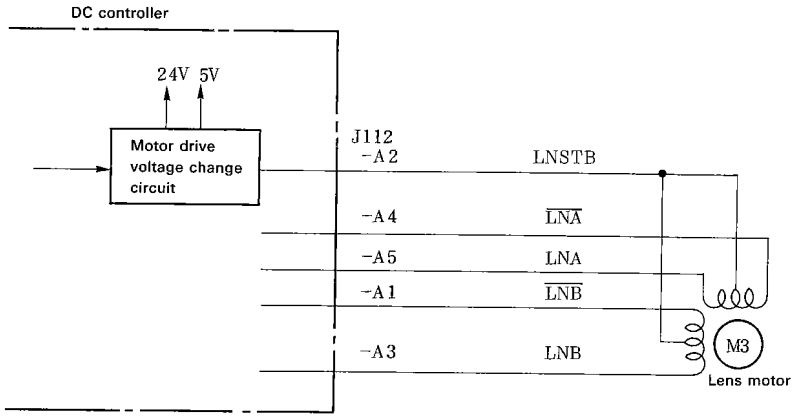

Figure 3-14

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C. Scanner Drive System

1. Outline

The scanner motor is a DC motor with a built-in clock pulse generator.

The scanner motor changes the direction of its rotation and its speed to accommodate different reproduction ratios when the scanner moves forward.

The scanner is moved at the same speed regardless of the reproduction ratio when moving in reverse; the speed is three times as high as that at which it is moved forward in the direct copy mode. The scanner, however, is braked at the time the signal plate reaches the photointerrupter (Q9) to bring it to the home position.

The distance the scanner travels varies in relation to the reproduction ratio and the size of copy paper.

2. Operations

The motor driver controls the rotation of the scanner motor in respect of direction and speed as well as in response to the following signals generated by the DC controller PCB.

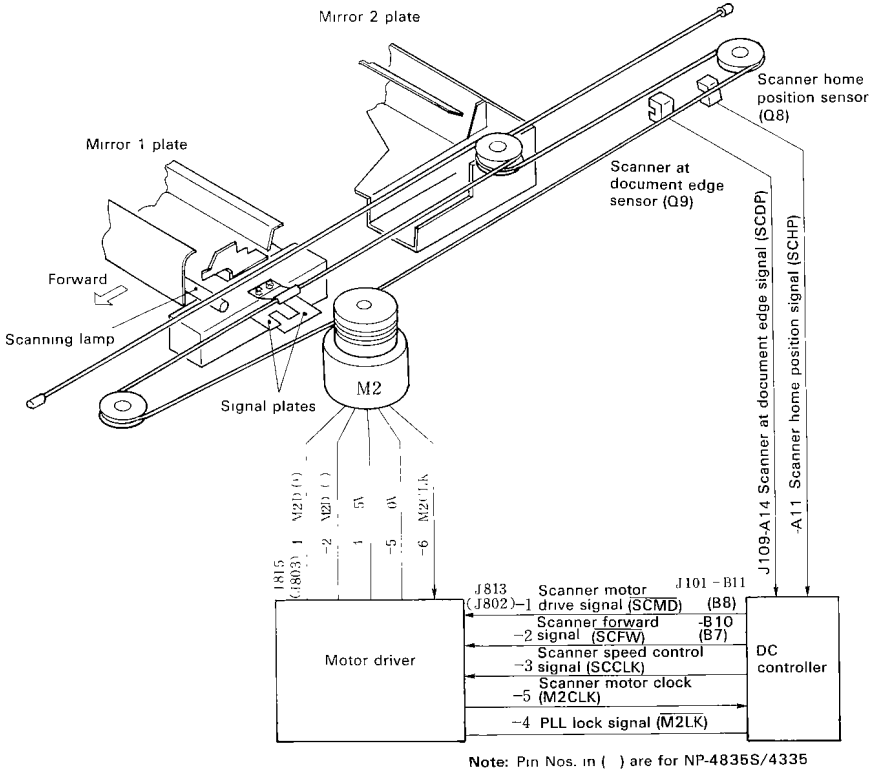
- Scanner motor drive signal ($\overline{SCMD}$)
- Scanner motor forward signal ($\overline{SCFW}$)
- Scanner speed control signal (SCCLK)

The motor driver operates in response to combinations of $\overline{SCMD}$ and $\overline{SCFW}$ states shown in Table 3-2.

	$\overline{SCMD}$	$\overline{SCFW}$
Forward	0	0
In reverse	0	1
Under brake	1	*

* Reverses '1' and '0' or '0' and '1'.

Table 3-2


Mirror 2 plate
Scanner home position sensor (Q8)
Mirror 1 plate
Scanner at document edge sensor (Q9)
Forward
Scanning lamp
M2
Signal plates
J109-A14 Scanner at document edge signal (SCDP)
A11 Scanner home position signal (SCHP)
J813 (J802)-1 Scanner motor drive signal (SCMD) J101-B11 (B8)
-2 Scanner forward signal (SCFW) -B10 (B7)
-3 Scanner speed control signal (SCCLK)
-5 Scanner motor clock (M2CLK)
-4 PLL lock signal (M2LK)
Motor driver
DC controller

Note: Pin Nos. in ( ) are for NP-4835S/4335

Figure 3-15

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When the scanner is moved forward, SCCLK varies between 500 Hz and 2 kHz according to the reproduction ratio; when the scanner is moved in reverse, it is 3 kHz. The motor driver exerts control by comparing the scanner motor clock pulses (M2CLK) against SCCLK and keeping them identical.

The NP-4835 indicates 'E203' on its control panel if the number of M2CLKs per sec falls below a specified value.

The NP-4335S/48335 indicates 'E203' on its control panel if the PLL clock signal ($\overline{M2LK}$) remains '1' for more than a specified period.

3. Relationship Between Scanner Sensors and Signals

Scanner sensor	Signal	Scanner		Meaning
		Forward	In reverse	
Q8	SCHP			Scanner home position
Q9	SCDP	1st		• Scanner in reverse in AE mode. • Document density measurement data read.
		2nd		• After 0.3 sec*, registration solenoid ON. • Scanner forward distance standard.
			1st	• Scanner in reverse OFF. • After about 2.5 ms*, scanner brake ON.

* Variable by service mode.

Table 3-3

4. Operations Sequence of Scanner

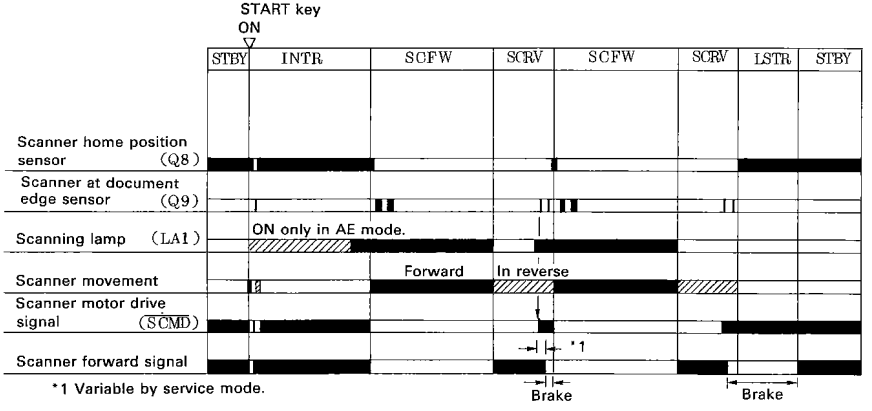

Figure 3-16

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D. Document Size Detection Control

1. Outline

The copier selects copy paper size and changes reproduction ratios automatically, and these capabilities are based on the size of the document to be copied.

For detection of the document size, three document detection circuits are provided at the points shown in Figure 3-17. These circuits detect the presence of a document when the copyboard cover is closed, and the DC controller decides its size in terms of A3, B4, A4, or B5 or Ledger, Legal, Letter or Mini (standard sizes).

When LEDs are turned ON by the document detection circuits, the light from the LEDs illuminates the document, if any. The light reflected by the document is then detected by phototransistors, which inform the DC controller of the presence or absence of a document in the form of signals.

2. Operation

When the copyboard cover is brought down to about 30° or less, the microswitch (MS2) located at the rear of the machine goes ON.

- NP-4835

The machine compares the output level of each sensor against the slice level to check the presence/absence of a document at the respective sensor; in addition, the size of the document is checked as in Table 3-4.

- NP-4835i/4835S/4335

The output level of each sensor is read at intervals of 0.5 sec after MS2 goes ON until the COPY START key is pressed. If no change occurs in the level during the period, the condition is assumed to indicate the presence of a document at the respective sensor; in addition, the size of the document is checked as in Table 3-4.

This mechanism enables detection of the size of a black document.

In this mechanism, however, the output level of the sensors remains the same when a book is used as a document; as such, if the output levels of the three sensors do not change, the level at the time MS2 goes ON is compared against the slice level as in the case of the NP-4835.

3. Document Size Detection

The DC controller detects the size of the document based on the levels of the document detection circuits.

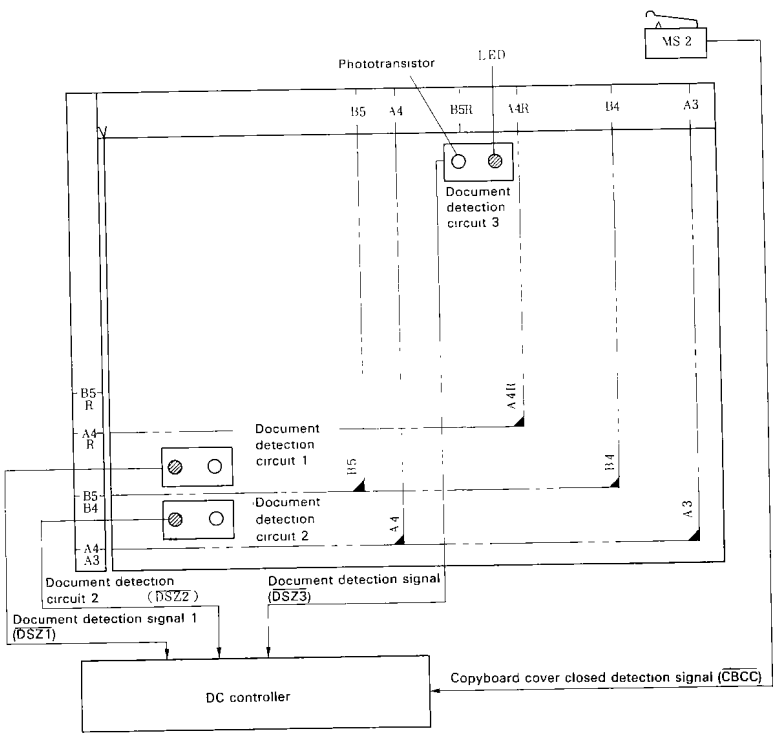

Figure 3-17A 100/220/240V machine only

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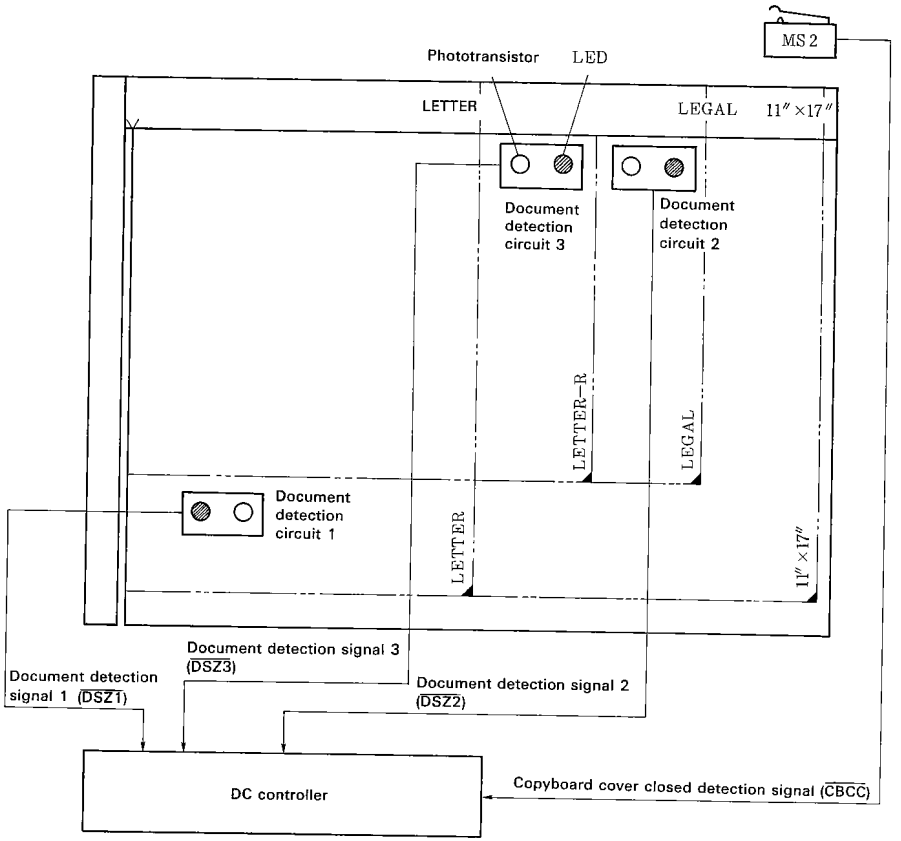

Figure 3-17B 115V machine only

No.	Document size	Document detection circuit 1	2	3
1	A3	ON	ON	ON
2	B4	ON	OFF	ON
3	A4	ON	ON	OFF
4	B5	ON	OFF	OFF
5	A4R	OFF	OFF	ON
6	B5R	OFF	OFF	OFF

ON: Detects presence of document.
OFF: Detects absence of document.

Table 3-4A

No.	Document size	Document detection circuit 1	2	3
1	11″×17″	ON	ON	ON
2	LEGAL	OFF	ON	ON
3	LETTER	ON	OFF	OFF
4	LETTER-R	OFF	OFF	ON
5	MINI-R	OFF	OFF	OFF

ON: Detects presence of document.
OFF: Detects absence of document.

Table 3-4B

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III. IMAGE FORMATION SYSTEM

A. Outline

The image formation system of the copier consists of the following:

- Scanning lamp control
- Primary and transfer corona current and grid bias control
- Pre-transfer corona and separation corona current control
- Developing bias control
- Laser exposure control (NP-4835/4835i only)
- Blank exposure lamp (LED) control (NP-4835S/4335 only)

■ NP-4835/4835i

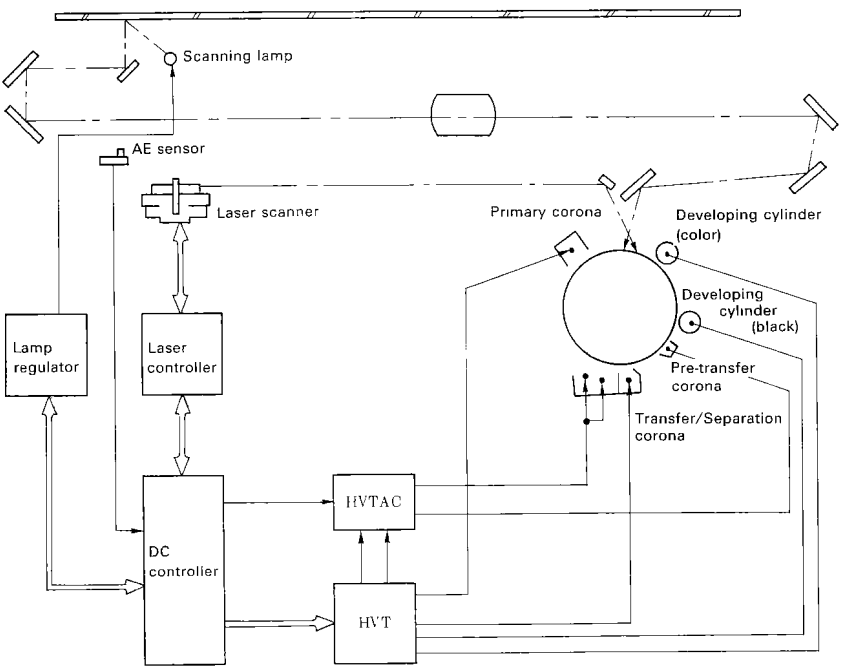

Figure 3-18

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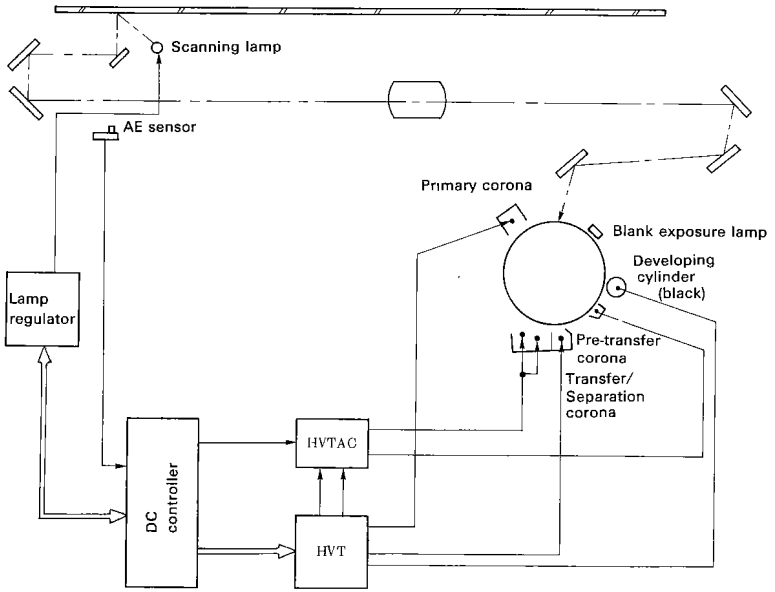
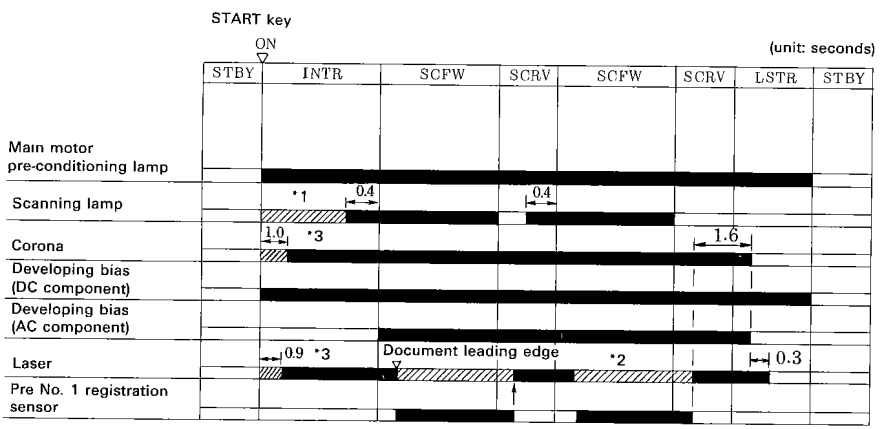


Figure 3-18A

B. Image Formation Timing Chart



*1 ON only in AE mode.
*2 For NP-4835/4835i, see Figure 3-31. For NP-4835S/4335, controlled according to the reproduction ratio, copy paper size, and copy mode.
*3 NP-4835S/4335 only.

Figure 3-19

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C. Scanning Lamp Intensity Control

1. Outline

Figure 3-20 shows the circuit used to control the scanning lamp intensity, and the circuit performs the following:

1) Turns the scanning lamp ON and OFF;
2) Detects whether the scanning lamp is ON or OFF (for self-diagnosis of the trigger circuit inside the lamp regulator); and
3) Controls the scanning lamp intensity

- Maintains constant intensity at time of voltage fluctuation,
- Controls to intensity suited to input from the copy density key (manual),
- Controls to intensity suited to document density (in AE mode), and
- Reduces intensity in special modes.

  Photo mode
  reduces by 8.6 V (100/115 V copier)
  reduces by 18.7 V (220/240 V copier)
  Full screen mode
  reduces by 3.0 V (100/115 V copier)
  reduces by 6.5 V (220/240 V copier)
  Reproduction ratio 64% or less
  reduces by 1.5 V (100/115 V copier)
  reduces by 3.3 V (220/240 V copier)

2. Operations

a. Turning the Scanning Lamp ON and OFF

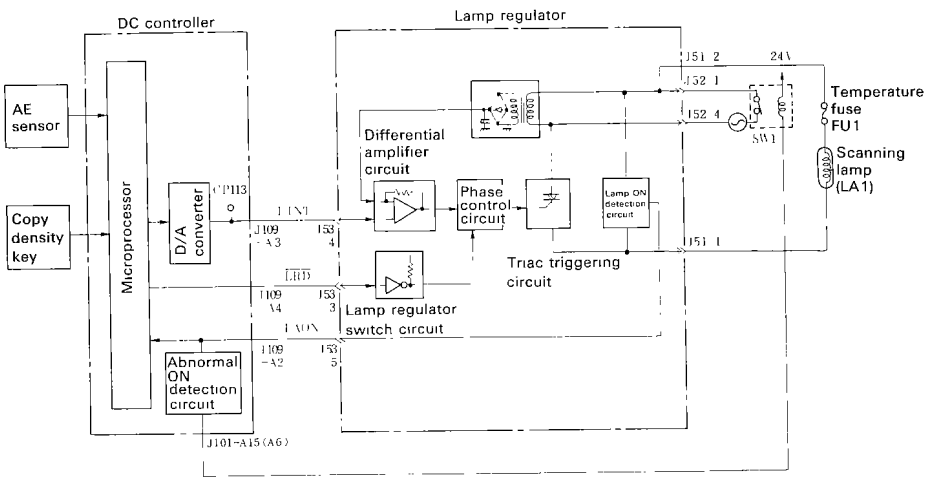
If $\overline{LRD}$ = 1, the output of the lamp regulator switch circuit is '0'; this condition deprives the phase control circuit of power and, as a result, the triac triggering circuit is OFF and the scanning lamp (LA1) is OFF.

If $\overline{LRD}$ = 0, the output of the lamp regulator switch circuit is '1'; the phase control circuit is supplied with 24 V, and activation of the triac triggering circuit turns the scanning lamp (LA1) ON.

b. Detection of Scanning Lamp ON

While the scanning lamp (LA1) is ON, i.e., while the triac triggering circuit is ON, the lamp ON detect circuit is also ON, and its output (LAON) is '1'.

Should LAON remain ON (1) for 40 seconds or more because of a faulty microprocessor or lamp regulator, the abnormal ON detection circuit is activated and the main power is turned OFF.



Note: Pin Nos in ( ) are for NP-4835s/4335.

Figure 3-20 Scanning Lamp Intensity Control Circuit

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c. Controlling the Scanning Lamp Intensity

The intensity of the scanning lamp is increased or decreased by way of controlling the supply voltage to the lamp in keeping with the value of the light intensity signal (LINT) from the DC controller.

The LINT signal varies between 10 V and 16 V depending on the settings made by the copy density key, document density, and intensity control setting in service mode. The signal phase-controls the supply voltage to the lamp so that, in terms of effective values, it varies between 45 V and 80 V (100/115 V machines) or between 98 V and 175 V (220/240 V machines).

3. Automatic Exposure Control (AE)

a. Outline

The copier is equipped with an automatic exposure (AE) mechanism, which automatically controls the intensity of the scanning lamp according to the density of the document.

When copies are made in the AE mode, copies free of fogging can be obtained without manually adjusting the copy density as long as the document is more or less uniform in density.

The intensity of the scanning lamp controlled by the AE mode is displayed on the control panel.

b. Control Mechanism

During initial rotation (INTR), the scanning lamp is turned ON, and the scanner is moved forward about 15 mm from its home position to expose the document.

At this position, the intensity of the light reflected over the area shown in Figure 3-21 is detected by the AE sensor (photodiode) and communicated to the DC controller.

Based on the input value, the DC controller computes the optimum intensity for the scanning lamp for copy operation, and the results are sent to the lamp regulator (LR1) as the light intensity adjustment signal (LINT).

Note:
A is the position of the AE sensor.

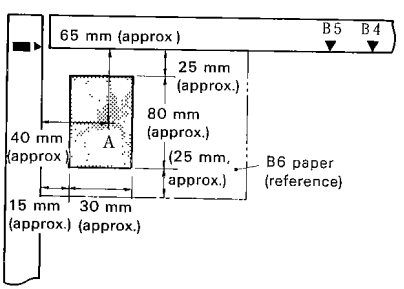

Figure 3-21

Figure 3-22 shows changes in the intensity of the scanning lamp in relation to different document densities.

The graph is based on intensity by which suitable density without fogging can be expected of newspapers or Test Sheet.

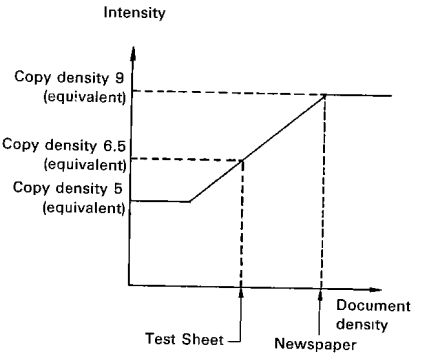

Figure 3-22

4. Checks (on input signals)

- J109-A4 (DC controller)
  Check if the voltage between J109-A4 (LRD) and GND on the DC controller PCB is about 0 V when the scanner moves forward and is about 24 V during initial rotation, when the scanner moves in reverse, and during last rotation.
  Should the measured voltages fail to represent the changes shown above, the DC controller may have failed.
- CP113 (DC controller) Voltage
  Check if the voltage between CP113 (LINT) and the GND on the DC controller PCB is about 10 V to 16 V while copies are made and the voltage is varied by a press on the copy density key.

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5. Intensity and AE Adjustment

Table 3-5 is a tabular list of items that can be adjusted on the scanning lamp intensity control circuit.

Item	Adjustment	Reference	Remarks
✳3✳ LIGHT	Optimum exposure Intensity for copy density 5	(Manual) Intensity ① ② 1 5 6 9 Copy density (AE) Intensity ① ② Document density	1) If setting in service mode is high, Intensity during copy cycle will increase, and copy density will decrease. 2) If setting in service mode is low, Intensity during copy cycle will decrease, and copy density will increase.
✳3✳ AE	Slope for AE control system	Intensity ① ② Copy density 5 Document density	1) If setting in adjustment mode is high, Density of newspaper copy will decrease. 2) If setting in adjustment mode is low, Density of newspaper copy will increase.
✳4✳ AE_ADJUST	AE scanning intensity	Determines standard intensity for AE scanning. (See the Service Handbook.)	

Table 3-5

D. Primary and Transfer Corona Current and Grid Bias Control

1. Outline

Figure 3-23 shows the circuit which controls the primary and transfer corona units and grid bias; the circuit performs the following:

- Turns the primary and transfer corona current ON and OFF;
- Maintains the primary corona current constant;
- Shifts the transfer corona current; and
- Shifts the primary corona unit grid bias.

The output of the primary corona unit is controlled to maintain constant current, thereby eliminating the effects of environmental changes on the corona discharge. The output of the transfer corona and grid bias varies in relation to the output of the primary corona unit.

The primary and transfer current and grid bias are turned ON and OFF by the primary corona level control signal (HVPR) generated by the DC controller.

For two-sided or overlay copies, the transfer corona current is changed by the transfer corona level control signal (HVTR).

For the photo mode, the high voltage to the primary corona grid wire is changed by the grid bias control signal (HVGB) generated by the DC controller.

2. Operations

The primary and transfer corona current and grid bias is turned ON and OFF by HVPR. The differential amplifier circuit shown in Figure 3-23 is activated when HVPR is about 8 V or more.

a. High-Voltage Output ON
HVPR control signal ON
└Differential amplifier circuit ON
└Variable pulse width circuit ON
├LED1 ON
└High-voltage transformer ON

The corona current output to the transfer corona at the time is of a value suited to HVTR. Similarly, the grid bias output to the grid wire is of a value suited to HVGB.

If environmental changes cause more corona current than that specified to flow from the primary corona the level of the return signal to the differential amplifier circuit will be higher, resulting in a smaller output from the circuit; this way, the current is controlled to the specified value at all times.

b. High-Voltage Output OFF
HVPR is about 4 V
└Differential amplifier circuit OFF
└Variable pulse width circuit OFF
├LED1 OFF
└High-voltage transformer OFF

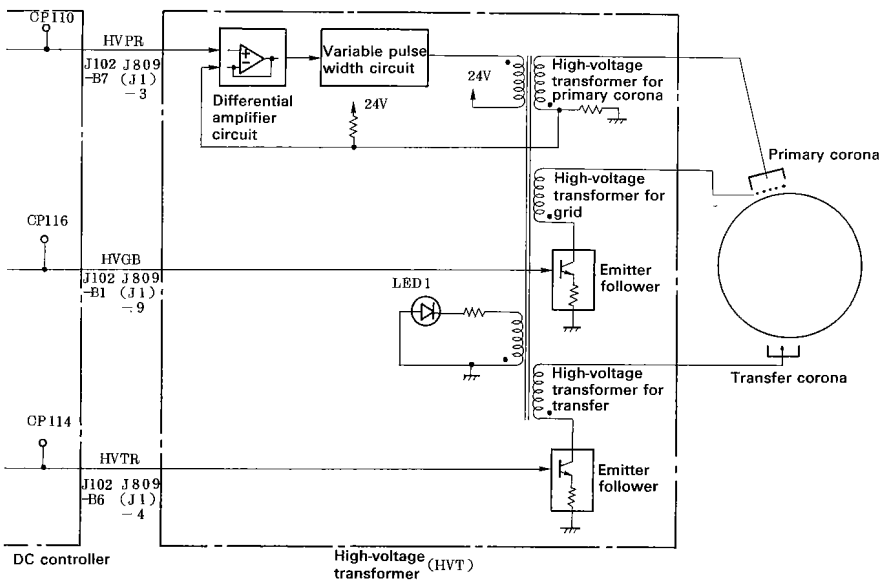

Figure 3-23 Primary/Transfer Corona Current and Grid Bias Control Circuit

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E. Separation and Pre-Transfer Corona Current Control

1. Outline

Figure 3-24 shows the circuit which controls the separation and pre-transfer corona; the circuit performs the following:

- Turns the separation and pre-transfer corona current ON and OFF;
- Maintains the separation and pre-transfer corona current constant; and
- Shifts the separation corona current.

As in the case of the primary corona, the separation and pre-transfer corona current is controlled to maintain constant current.

The separation and pre-transfer corona current is turned ON and OFF and the separation corona current value is changed by the following three signals generated by the DC controller.

- Separation corona level control signal HVSP
- Pre-transfer corona level control signal HVPT
- AC transformer drive signal $\overline{\text{HVAC}}$

2. Operations

Figure 3-24 shows two differential amplifier circuits, which are activated when HVSP or HVPT is 16 V or less.

a. Separation and Pre-Transfer High Voltage Output ON
HVSP/HVPT control signal output
└→Differential amplifier circuit ON
└→Variable pulse width circuit ON
├→Separation high-voltage transformer ON
└→Pre-transfer high-voltage transformer ON

This generates the DC component of each high voltage. At the time $\overline{\text{HVAC}}$ is '0'; and the high-voltage AC transformer is turned ON, and the DC component together with the AC component is output by the high-voltage AC transformer. The separation and pre-transfer corona current at the time is of a value suited to HVSP and HVPT.

b. Separation and Pre-Transfer High-Voltage Output OFF
HVSP and HVPT is about 17 V
└→Differential amplifier circuit OFF
└→Variable pulse width circuit OFF
├→Separation high-voltage Transformer OFF
└→Pre-transformer high-voltage Transformer OFF

At the time, $\overline{\text{HVAC}}$ is '1', and the high-voltage AC transformer is turned OFF.

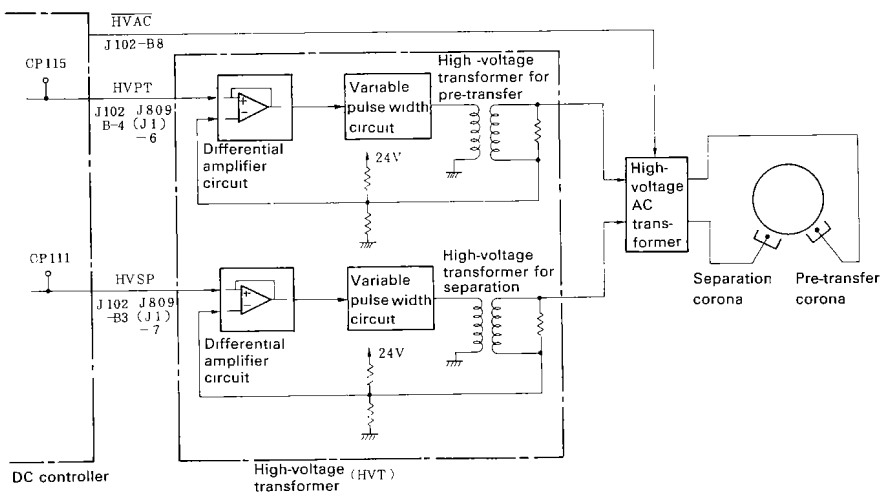

Figure 3-24 Separation and Pre-Transfer Corona Current Control Circuit

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F. Developing Bias Control

1. Outline

Figure 3-25 shows the circuit which controls the developing bias; the circuit performs the following:

- Turns the AC component of the developing bias ON and OFF;
- Turns the DC component of the developing bias ON and OFF; and
- Controls the voltage level of the DC component of the developing bias.

The control is by the following two signals output by the DC controller.

- Developing bias AC drive signal $\overline{\text{HVBAC}}$
- Developing bias DC level control signal HVBDC

2. Operations

a. AC Bias ON/OFF

- When $\overline{\text{HVBAC}}$ = 1,
  Variable pulse width circuit OFF
  └AC high-voltage transformer OFF

This condition cuts off the AC supply to the developing cylinder.

- When $\overline{\text{HVBAC}}$ = 0,
  Variable pulse width circuit ON
  └AC high-voltage transformer ON

This condition supplies the AC bias to the developing cylinder.

b. DC Bias ON/OFF and Voltage Level

The differential amplifier circuit shown in Figure 3-25 is activated when HVBDC is 16 V or less.

- DC bias OFF
  HVBDC is about 17 V
  └Differential amplifier circuit OFF
  └Variable pulse width circuit is OFF
  └DC high-voltage transformer OFF

This condition cuts off the DC bias to the developing cylinder.

- DC Bias ON
  HVBDC is 8 V to 16 V
  └Differential amplifier circuit ON
  └Variable pulse width circuit ON
  └DC high-voltage transformer ON

This condition supplies the DC bias to the developing cylinder.

HVBDC varies between 8 V to 16 V depending on the settings made by the copy density correction key of the user asterisk mode and selection of the CD unit (NP-4835 only) or selection of the service mode.

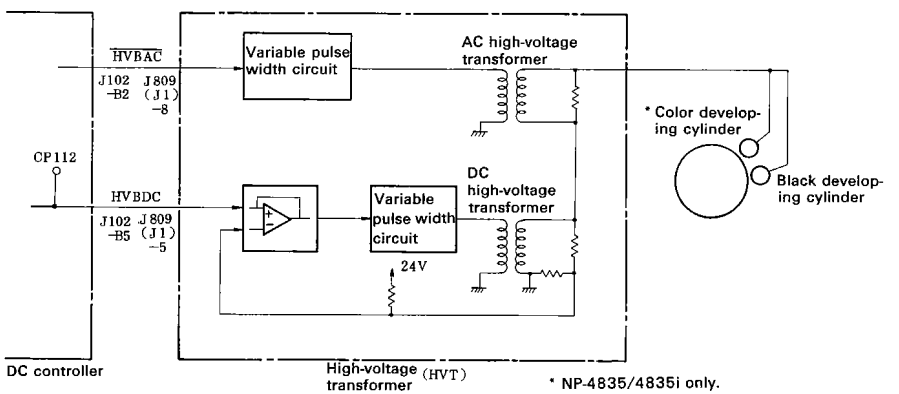

Figure 3-25 Developing Bias Control Circuit

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3. Adjustment

Table 3-6 is a tabular list of items that can be adjusted on the developing bias control circuit. Be sure to return the copy density correction to its center value in the user asterisk mode (✻ 3 ✻) before adjustment.

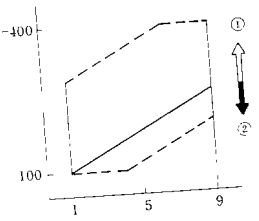
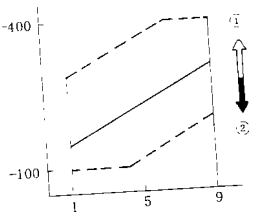
Item	Adjustment	Specifics	Remarks
✻3✻ DCB_B	Developing bias (DC component) (during black copying)	Developing bias DC component  Copy density correction key	1) If setting in service mode is high, DC component of developing bias during black copying will increase, and copy density will decrease. 2) If setting in service mode is low, DC component of developing bias during black copying will decrease, and copy density will increase.
✻3✻ DCB_C (NP-4835 only)	Developing bias (DC component) (during color copying)	Developing bias DC component  Copy density correction key	1) If setting in service mode is high, DC component during color copying will increase, and color copy density will decrease. 2) If setting in service mode is low, DC component of developing bias during color copying will decrease, and color copy density will increase.

Table 3-6

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G. Laser Exposure (NP-4835/4835i only)

1. Outline

Although the copier is of an analog type, it is equipped to perform laser exposure for the following purposes:

- Blank exposure (for REDUCE, left/right margin and leading edge erasure)
- Framing, blanking; margin and frame erasure
- Add-ons (date, data memo, numbering, character input, stamp)
- Highlight (shade, paint, frame; NP-4835i only)
- Screen

The laser system consists of a laser unit, which is the source of laser beams, and a laser scanning system, which performs scanning by means of an 8-facet mirror.

The laser beams generated by the laser unit are converted to a parallel beam by the collimating and cylindrical lenses and forwarded to the 8-facet mirror, which rotates at a constant speed.

The laser beam reflected by the 8-facet mirror focuses on the drum through the focusing lenses arranged in front of the 8-facet mirror. At the time, the path of the beam from the focusing lenses is bent by the work of the reflecting lens.

In keeping with the 8-facet mirror rotating at a constant speed, the laser beam on the drum scans the drum at a constant speed.

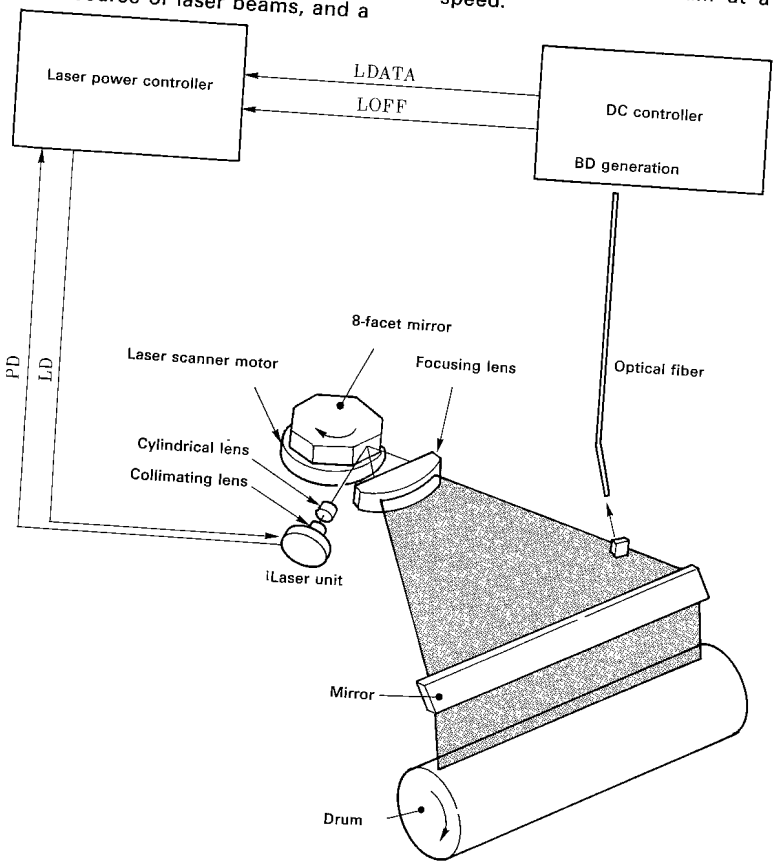

Figure 3-26

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As described in CHAPTER 2, the copier reproduces images by placing toner on those areas of the drum that represent dark areas of the document. It differs from conventional digital copiers in that it uses laser exposure to eliminate charges from the drum.

See Figure 3-27 for the area exposed at time of blank exposure and Figure 3-28 for the area exposed in the date/time mode.

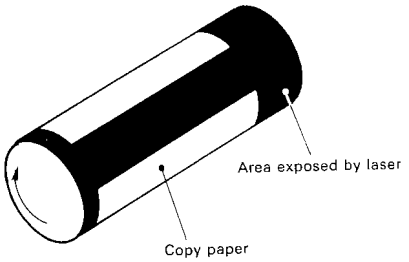
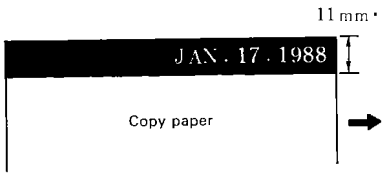


Figure 3-27



* Variable in service mode.

Figure 3-28

For character input or stamp output, the overlay mode is used with the first side subjected to image exposure and the second side to laser exposure.

For date, data memo, or numbering output, the overlay mode is not used so as to keep the copy speed fast; instead, both image exposure and laser exposure are performed at the same time.

If the area for data output (toward the front on the drum) of the document happens to be white, the entire area will be represented as a light area on the drum even if the laser is turned OFF for the date characters.

To prevent this condition, a shutter is provided between mirror 5 and mirror 6, and the shutter is opened when the data is output, keeping a length of 8 mm at the front of the drum free of light.

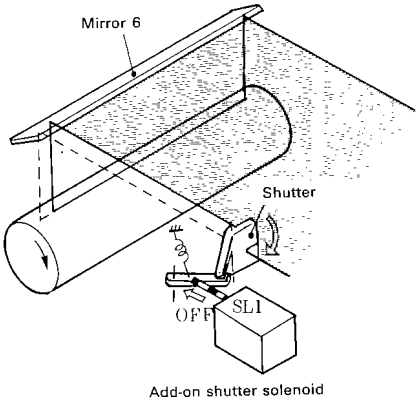


Figure 3-29

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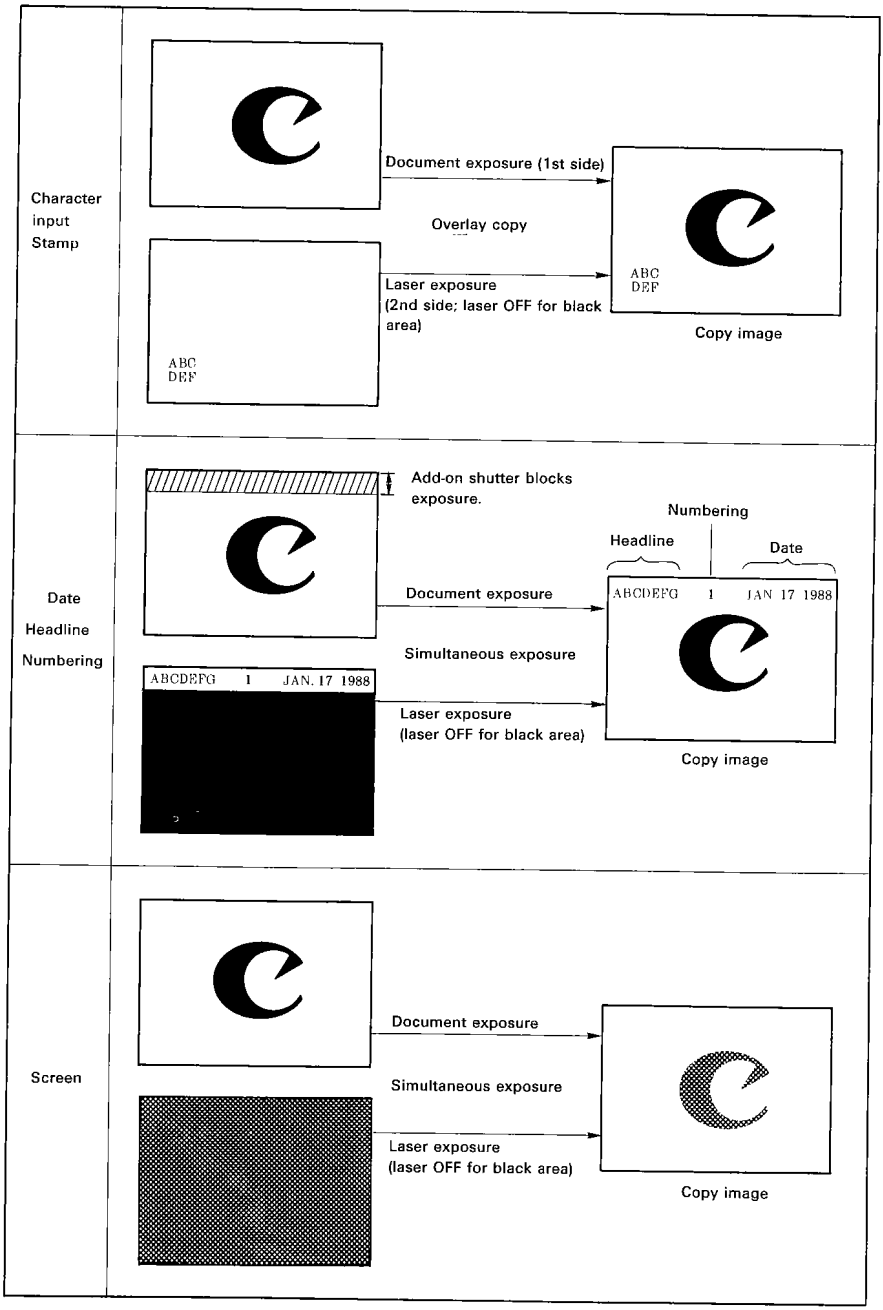

Table 3-7

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2. Horizontal/Vertical Synchronization

a. Horizontal Synchronization (main scanning direction)

The laser beam reflected by the BD mirror provided on its path is sent to the DC controller through optical fiber for generation of the BD signal. After a lapse of time equal to 11.5 mm in terms of distance on the drum following the generation of the BD signal, the laser exposure outside the image area is ended, and laser control suited to the copy paper size, reproduction ratio, and add-ons starts.

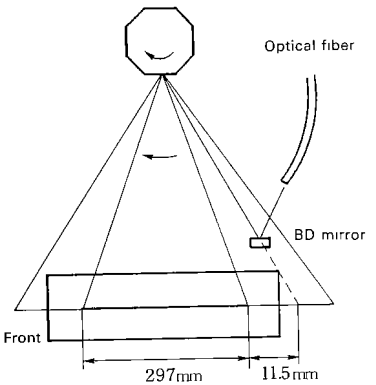


Figure 3-30

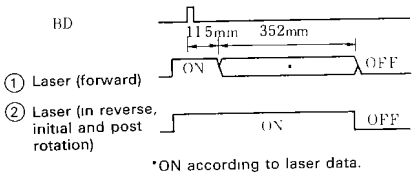


Figure 3-31

b. Horizontal Synchronization (sub-scanning direction)

When the scanner starts to move forward and the scanner at document edge signal (SCDP) is output, VSYNC is generated after a lapse of time equal to 2 mm* in terms of distance in the sub-scanning direction on the drum. The laser is kept ON while VSYNC is output; see 1 in Figure 3-31.

*There is a discrepancy of 2 mm (approx.) between the optical image of the document and the point on the drum the laser beam hits.

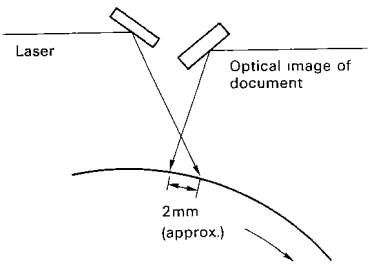
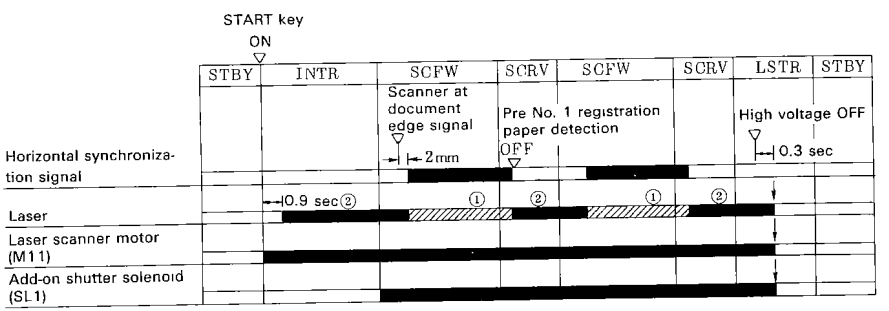


Figure 3-32



Laser ON at ① and ② as in Figure 3-31.

Figure 3-33

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3. Generation of Laser Data

Figure 3-40 is a block diagram which depicts the laser control circuit. Laser data is generated by the gate array (Q115) and RAM (Q113) on the DC controller, and the data is used by the laser power controller in turning the laser ON and OFF.

a. Area Data

Upon a press on the START key, the copy paper size and the area for framing, blanking and margin and frame erasure are written into the RAM for each page.

For the framing operation shown in Figure 3-34, the data shown in Figure 3-35 is written into the RAM. The data pertains to the X coordinates that may have changed in the paper feed direction (X) and to the main scanning direction (Y) up to the next point of change.

The data is read for each line in the main scanning direction when VSYNC is output in keeping with BD for timing.

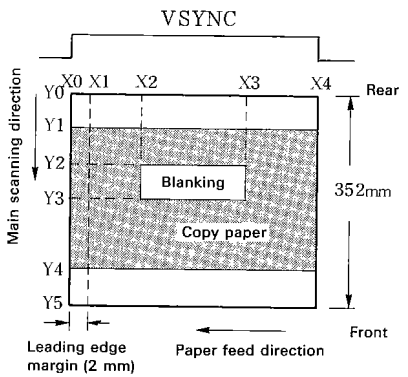

Figure 3-34 Blanking

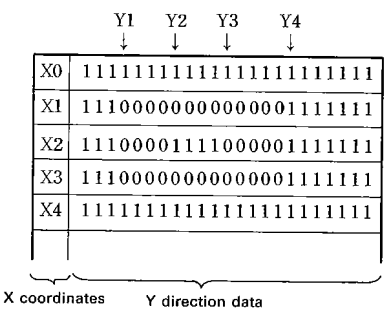

Figure 3-35 RAM Data for Area (blanking)

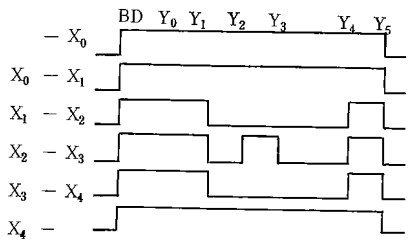

Figure 3-36 Laser ON Area (blanking)

b. Add-On Data*

* Includes date, headline, numbering, character input, and stamp.

When the START key is pressed, the position of the character is written into the control register inside Q115.

The character data of an add-on is written on the RAM in 16 × 16 bits for each character. A single stamp, however, consists of about 32 units of 16 × 16 bits.

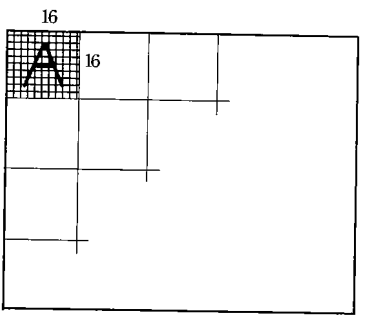

Figure 3-37 RAM Data for Add-On

c. Screen Data

As to the screen data, the pattern shown in Figure 3-38 has already been written into the RAM. Q115 repeatedly reads the data to generate screen data.

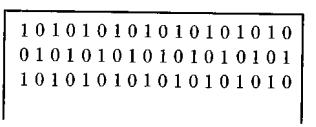

Figure 3-38 RAM Data for Screen

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4. Adjusting the Laser Intensity

As the laser unit in the copier is not provided with a temperature control mechanism, the laser intensity can fluctuate in response to changes in the temperature inside the copier without some measure.

To avoid such fluctuation, the laser intensity is controlled as follows:

When the intensity is adjusted, the DC controller keeps LDATA '1' at all times to keep the laser ON. When the DC controller sends the light intensity adjustment command to the laser intensity control circuit (Q504), Q504 in response reduces the intensity to half and increases it again until the laser intensity feedback signal (PD1) reaches the specified value.

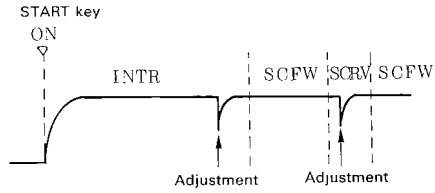

Figure 3-39 Laser Intensity Control

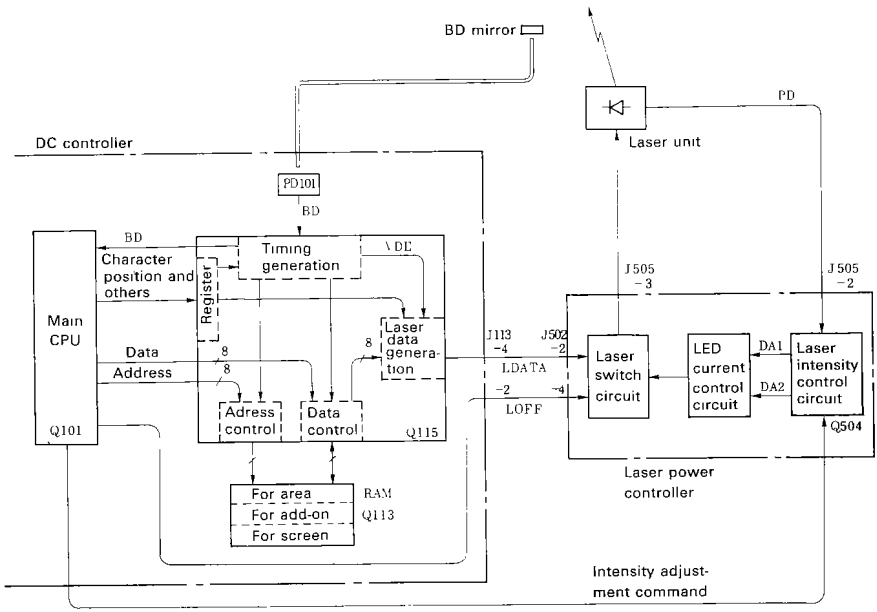

Figure 3-40 Laser Control Circuit

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5. Laser Scanner Motor Control

Figure 3-41 shows the laser scanner motor (M11), which rotates the 8-facet mirror.

When the DC controller causes the laser scanner drive signal ($\overline{LMD}$) to go '0', the rotation speed control circuit controls the voltage of the laser scanner motor control signal (LMC) so that the laser scanner motor clock (LMCLK) is of the specified frequency.

As long as the frequency of LMCLK is within the specified range, the rotation speed control circuit outputs the laser scanner motor ready signal ($\overline{LMRDY}$ = 0). The DC controller outputs 'E110' when $\overline{LMRDY}$ = 1 while the laser scanner motor is rotating.

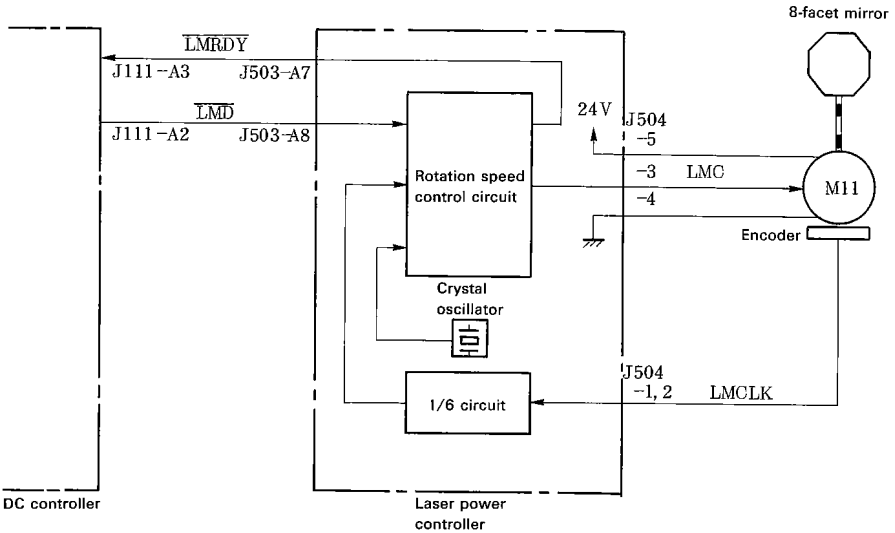

Figure 3-41

G.-a. Blank Exposure Lamp (LED) Control (NP-4835S/4335 only)

1. Outline

The blank exposure lamp is an array of 124 LEDs.

All of the 124 LEDs of the blank exposure lamp remain ON except while the drum is rotating and while the document is being exposed.

While the document is being exposed, the number of LEDs that are turned ON is determined according to the copy size and copy mode selected.

The two LEDs at the rearmost and frontmost are kept turned ON whenever the drum is rotating.

2. Reduction

When the document is exposed in the REDUCTION mode, LEDs (rear) in numbers suited to the cassette size and the reproduction ratio are turned ON to black (white) out the non-image areas.

3. Direct

When the document is exposed in the DIRECT mode, LEDs (rear) in numbers suited to the cassette size are turned ON to black (white) out the non-image areas.

When non-standard size copies are made in the DIRECT mode with a fixed reproduction ratio, a non-image area of about 2.0 mm in width is provided at the rear and front of the image.

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H. Developing Assembly and Cleaning Unit

1. Outline

The black developing assembly and CD unit of the NP-4835/4835i are engaged or disengaged by the black developing assembly clutch.

The black developing assembly of the NP-4835S/4335 is designed to be engaged or released manually by a lever.

The rotation of the black developing assembly and CD unit is driven by the main motor by way of the drum drive assembly.

The waste toner scraped by the cleaning blade is carried into the OPC drum for collection.

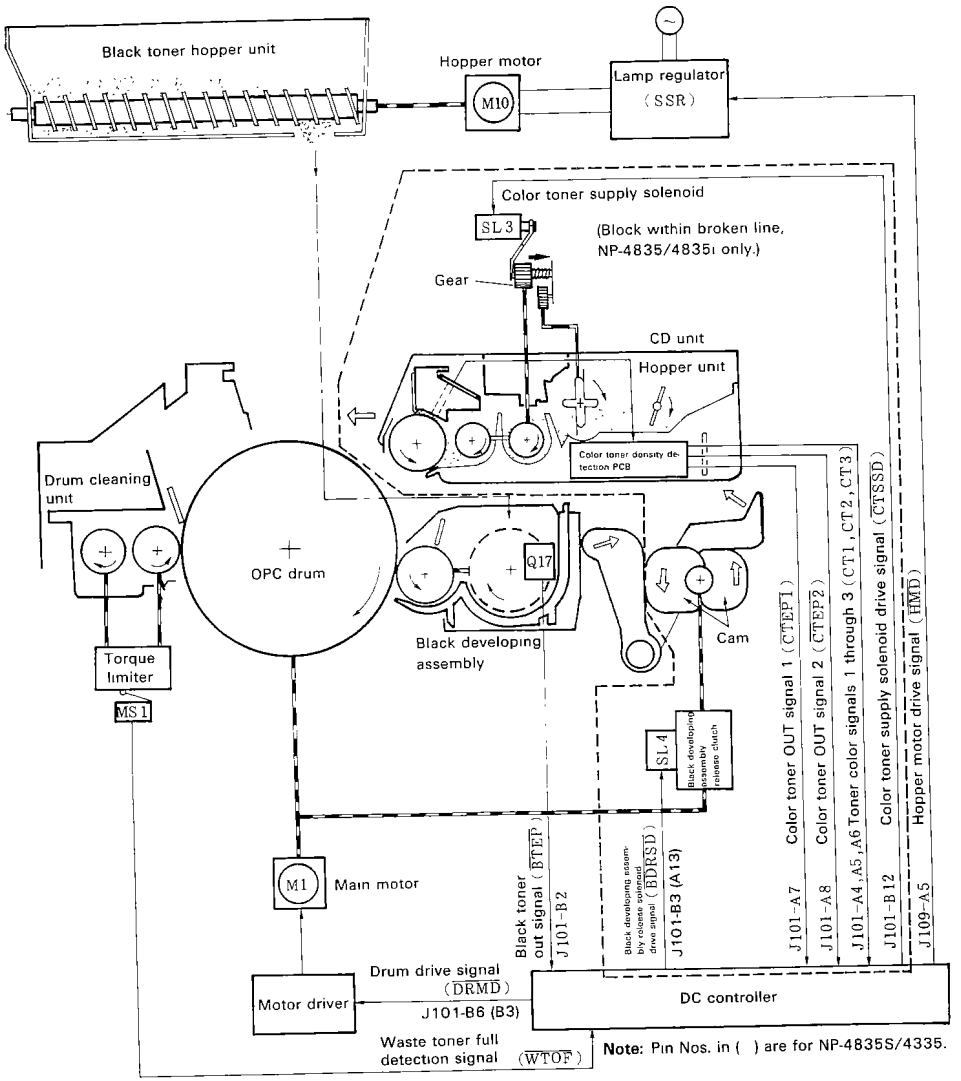

Figure 3-42

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2. Black Toner Detection and Supply

The amount of toner inside the black developing assembly is monitored by the toner sensor (Q17). When the black toner falls short of the specified amount, the hopper motor (M10) rotates to supply black toner from the black toner hopper unit to the black developing assembly.

When the hopper unit runs out of black toner and the toner sensor detects the absence of toner for more than 60 seconds after the hopper motor is turned ON, the copy cycle is stopped at once and the message 'ADD TONER' will be indicated. If a feeder is in use, the document will be forwarded to the copyboard glass.

Note:
The toner sensor is equipped with an oscillator which, in the absence of toner, oscillates at several kHz and causes the sensor output to go '0'. In the presence of toner, the weight of the toner stops its oscillation, and the sensor output goes '1'.

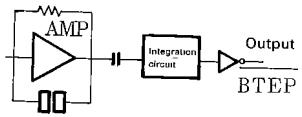
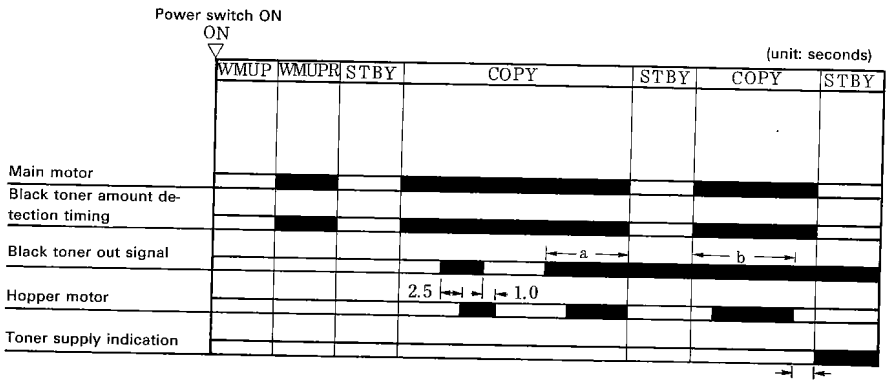


Figure 3-43



a + b = 60 (sec; accumulative)
Counts are held for 60 sec even when power is OFF because of a jam or others.
Counts are stored when power switch is turned OFF and ON while toner supply message is ON; toner supply indication is lit after 45 sec. in this case.

Paper already picked up is processed.

Figure 3-44

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3. CD Unit (NP-4835/4835i only)

a. Toner Concentration

The concentration detection circuit used in the CD unit exposes the developer by a lamp and measures the reflected light for detection of the concentration of the developer.

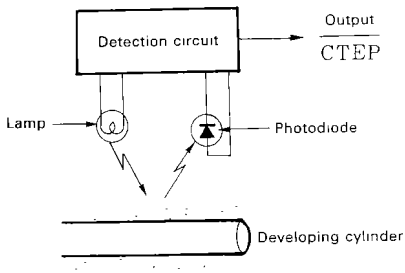


Figure 3-45

When the concentration of the developer grows lower than the specified value, the circuit turns the color toner supply solenoid (SL3) ON to supply toner from the hopper unit of the hopper inside the CD unit. Should the concentration fail to increase after the color toner supply solenoid is kept ON for a specified period of time, the copy cycle will be stopped at once and the message 'ADD COLOR TONER' will be indicated. If a DF is in use, the document will be forwarded to the copyboard glass.

The color is identified based on the input to the DC controller of toner color signals 1, 2, and 3 from the color toner concentration detection circuit. (See Table 3-8.)

Signal	Red	Blue	Green	Brown	CD unit out
Toner color signal 1 (CT1)	0	1	0	1	1
Toner color signal 2 (CT2)	0	0	1	1	1
Toner color signal 3 (CT3)	0	0	0	0	1

Table 3-8

b. Toner Supply Sequence

Figure 3-47 shows the toner supply sequence at the time the developer concentration varies as in Figure 3-46 in relation to the level of the color toner out signal (CTEP1, CTEP2).

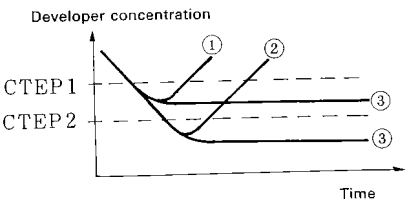
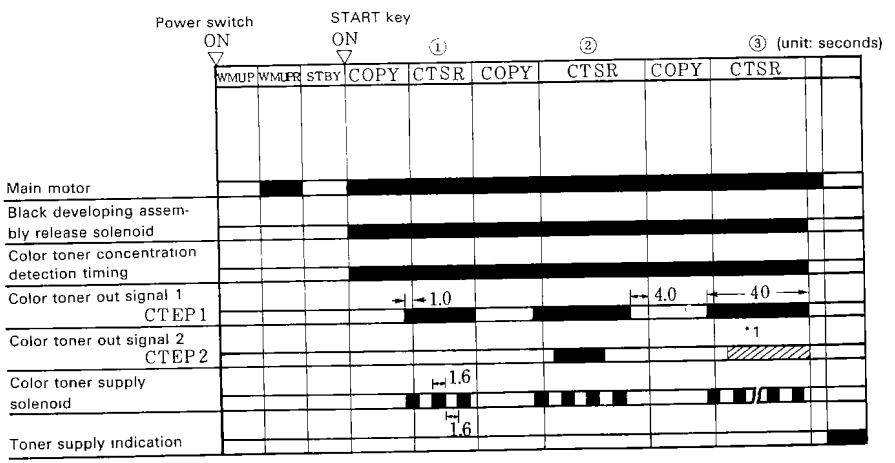


Figure 3-46



*1 '1' and '0' of CTEP2 are irrelevant to sequence.

Figure 3-47

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c. Color Toner Concentration Detection Circuit

The light from a lamp exposes the toner on the cylinder, and the reflected light is detected by the photodiode (Q858). The direct light from the lamp is detected by Q857 and used as reference.

The output of Q858 and Q857 is amplified by operation amplifiers 1 and 2 and sent to comparators 1 through 4. Comparators 1 through 4 operate as follows according to the voltage at points A through E.

B < A ..... $\overline{CTEP2}$ = 0
D < A ..... $\overline{CTEP1}$ = 0
C > A > E ..... LED851 ON

- During Installation (supplying starter developer)

Voltage at B (output of operation amplifier 1): 12 to 13 V*
Voltage at C: Lower than B by 0.07 V*
Voltage at E: Lower than B by 0.14 V*

Turn VR851 so that the voltage at A is in between C and E.

LED851 lights.

* Varies depending on color of toner and other factors.

- Low Developer Density

D < A ..... $\overline{CTEP1}$ = 0
If the density lowers still further,
B < A ..... $\overline{CTEP2}$ = 0

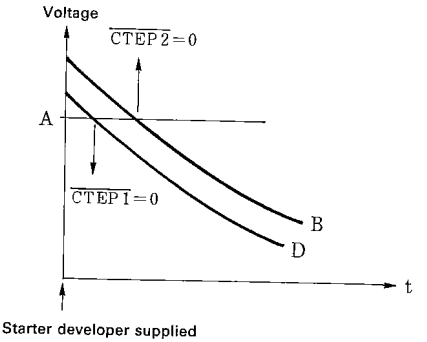

Figure 3-48

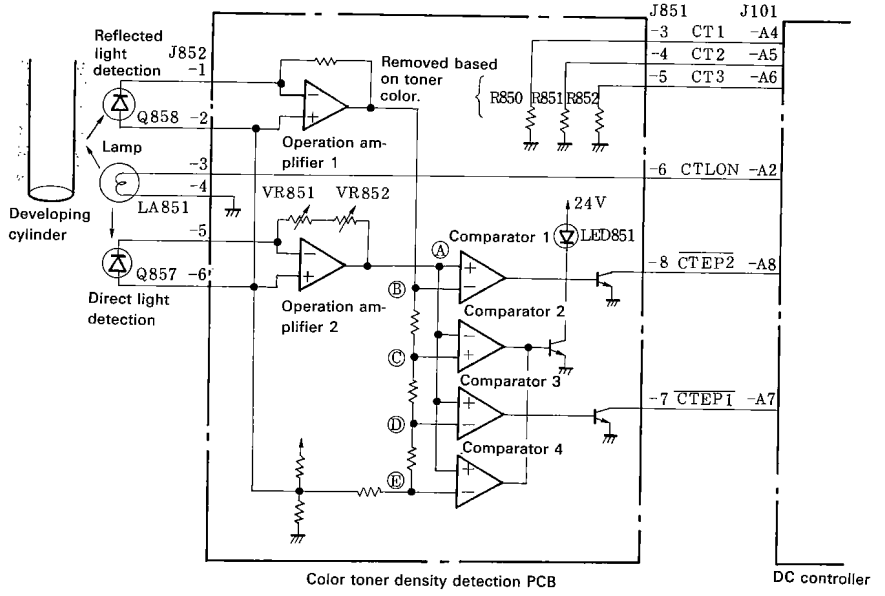

Figure 3-49

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4. Waste Toner Detection

When the drum rotates, its drive is transmitted, in the order named, to the drum gear, cleaning roller gear, screw gear, coupling, and feedscrew. The feedscrew is used to carry the waste toner into the drum collected by the cleaning blade and cleaning roller.

The coupling is pressed against the screw gear for transmission of drive.

When the inside of the drum and the pipe becomes full of toner, the rotation of the feedscrew starts to drag, and the coupling is pushed up; this in turn cuts off the drive to the feedscrew and causes the lever to press on the microswitch.

At this time, the message 'WASTE TONER FULL' is indicated on the display while in copy operation. Instruct the customer to call for service when the message appears. (see p. 4-26.)

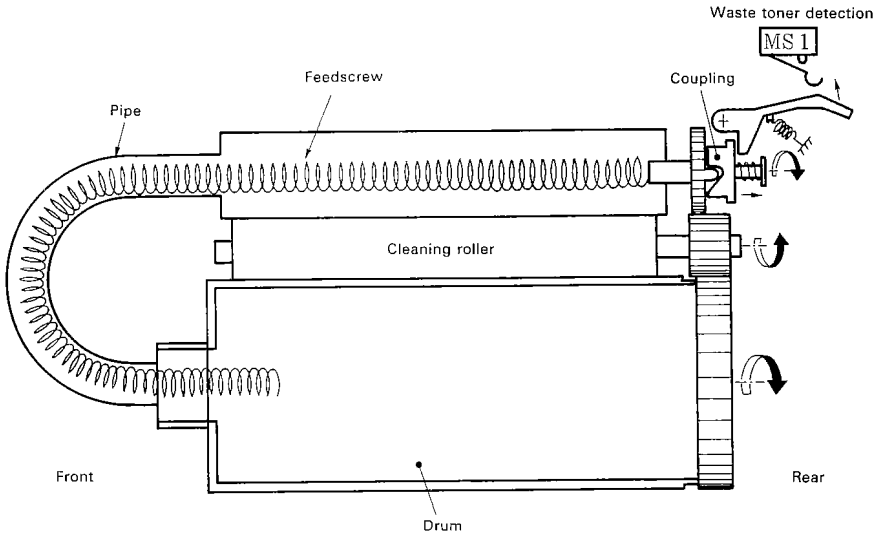

Figure 3-50

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IV. PAPER PICK-UP AND FEEDER SYSTEM

A. Outline

The size of the cassette set in the cassette holder and the absence or presence of a cassette in the holder is detected by four switches (CST1 through CST4) provided in each cassette holder.

The copy paper inside the cassette is raised by the lifter, and the lifter stops at a pre-determined position detected by photointerrupters (Q12, Q13, Q851, or Q853).

The presence or absence of paper inside the cassette is detected also by photointerrupters (Q10, Q11, Q850, or Q852).

When the pick-up clutch (CL2 or CL801) is turned ON, the pick-up roller makes a single turn to send a sheet of copy paper from the cassette into the copier.

The movement of the paper is then controlled by each of the registration rollers so that the leading edge of the image on the drum and that of the paper match; thereafter, the paper is sent to the copy tray through the transfer, separation, and feeder units and fixing assembly and delivery unit.

For a single overlay copy, the paper deflector is shifted up when the paper (1st side copy) reaches the delivery unit so as to send the paper to the lower feeder unit.

The movement of the paper (2nd side copy) is controlled so that the leading edge of the image on the drum and that of the paper match, and the paper is sent to the copy tray through the transfer, separation, and feeder units and fixing assembly and delivery unit.

In the case of a single two-sided copy, the No. 2 delivery roller rotates in reverse about 0.3 seconds after the paper (1st side copy) passes the delivery sensor (Q2), and the paper deflector is shifted up. The paper is then switched back and sent to the lower feeder unit. The paper (2nd side copy) is controlled exactly the same way as overlay operation and sent to the copy tray.

The copier is also provided with a mechanism which moves the entire No. 1 registration rollers (upper, lower) in the direction of the thrust so as to keep the leading edge of paper under control for each copy. (For details, see p. 3-70.)

The paper path has five photointerrupters which checks whether the paper has reached or passed their respective points (from cassette 1).

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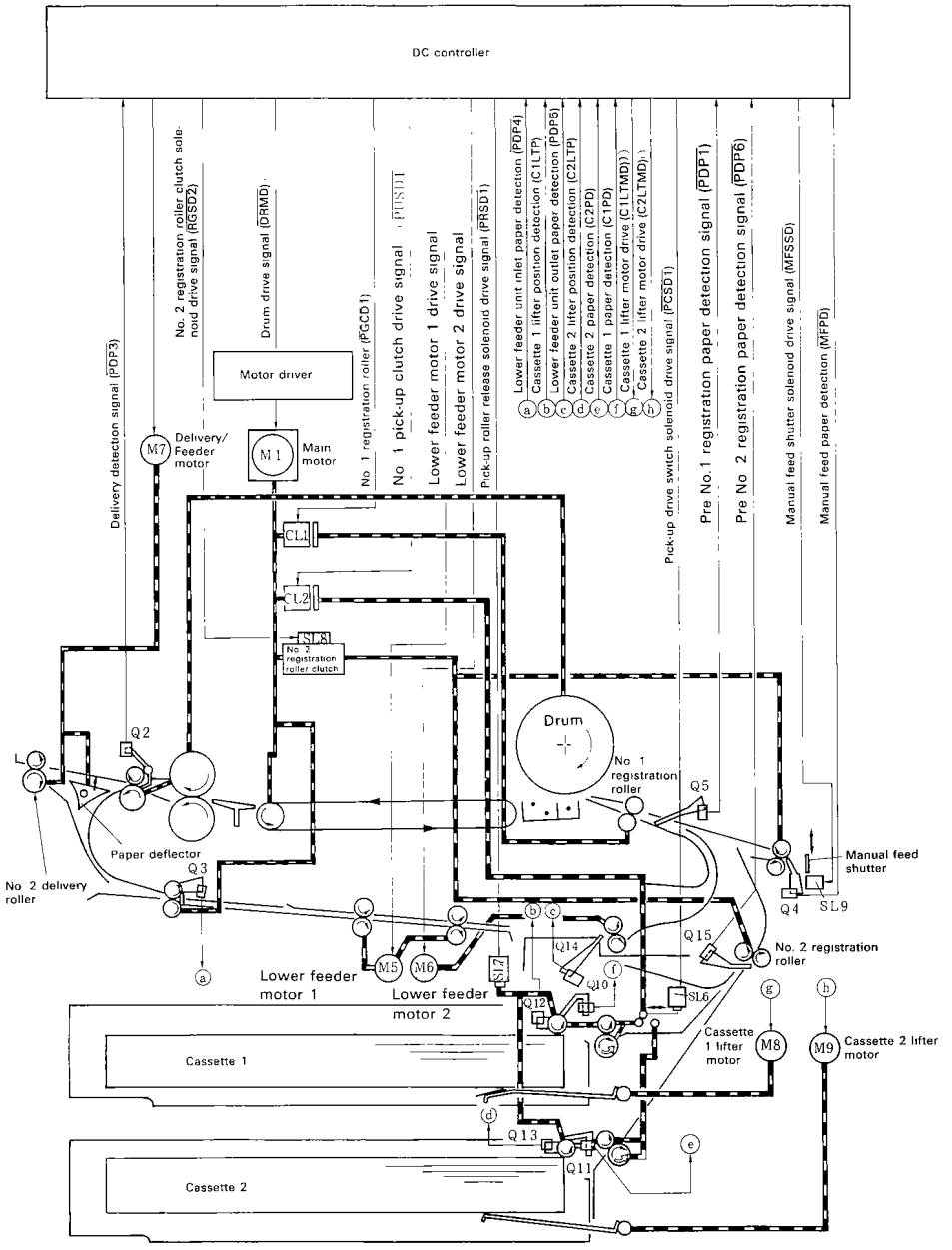
DC controller
Delivery detection signal (PDP3)
No. 2 registration roller clutch solenoid drive signal (RGSD2)
Drum drive signal (DRMD)
Motor driver
No 1 registration roller (PGCD1)
No 1 pick-up clutch drive signal (PUSD1)
Lower feeder motor 1 drive signal
Lower feeder motor 2 drive signal
Pick-up roller release solenoid drive signal (PRSD1)
Lower feeder unit inlet paper detection (PDP4)
Cassette 1 lifter position detection (C1LTP)
Lower feeder unit outlet paper detection (PDP5)
Cassette 2 lifter position detection (C2LTP)
Cassette 2 paper detection (C2PD)
Cassette 1 paper detection (C1PD)
Cassette 1 lifter motor drive (C1LTMD)
Cassette 2 lifter motor drive (C2LTMD)
Pick-up drive switch solenoid drive signal (PCSD1)
Pre No.1 registration paper detection signal (PDP1)
Pre No 2 registration paper detection signal (PDP6)
Manual feed shutter solenoid drive signal (MFSSD)
Manual feed paper detection (MFPD)
M7 Delivery/ Feeder motor
M1 Main motor
CL1
CL2
SL8 No. 2 registration roller clutch
Drum
No. 1 registration roller
Q5
Q2
Paper deflector
Q3
No. 2 delivery roller
Manual feed shutter
Q4
SL9
Q15
No. 2 registration roller
Q14
Q10
SL6
M5
M6
SL7
Lower feeder motor 1
Lower feeder motor 2
Q12
Cassette 1
Cassette 1 lifter motor
M8
M9
Cassette 2 lifter motor
Q13
Q11
Cassette 2

Figure 3-51

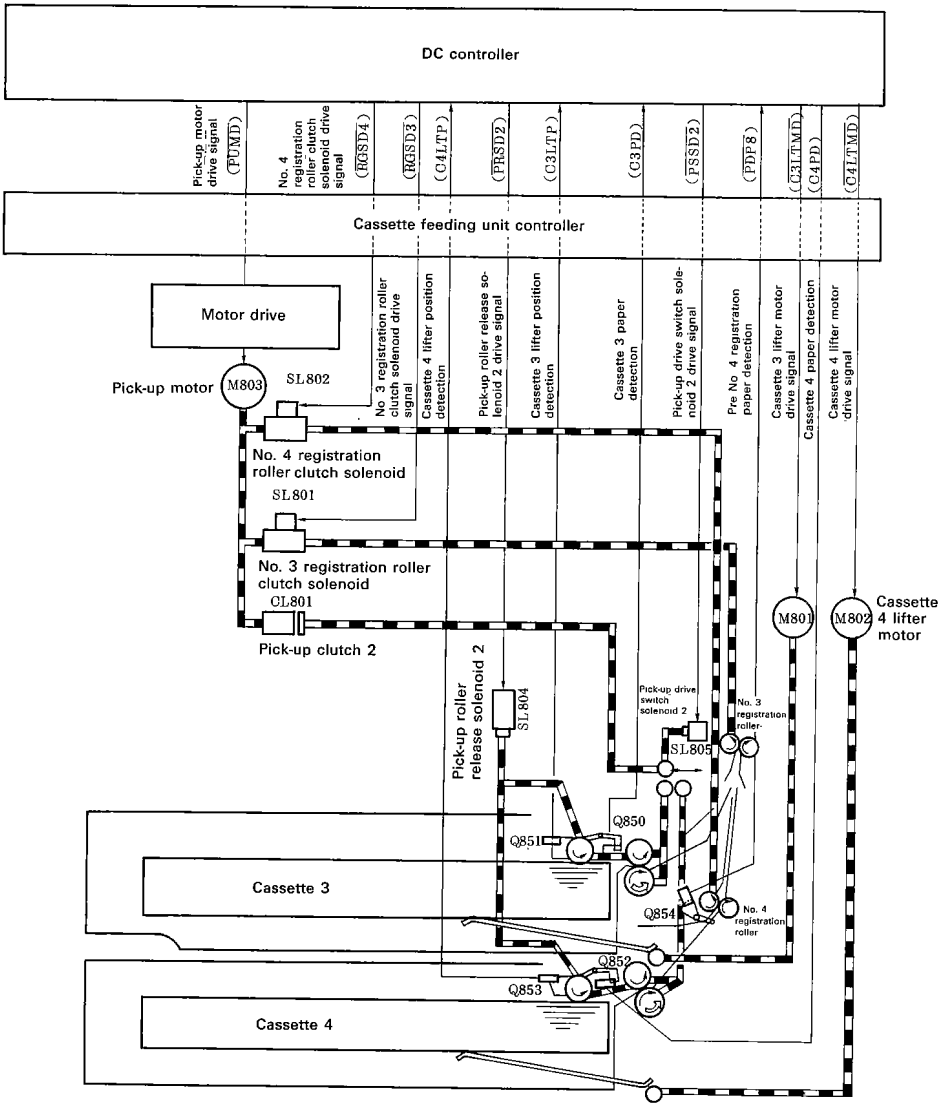

Figure 3-52

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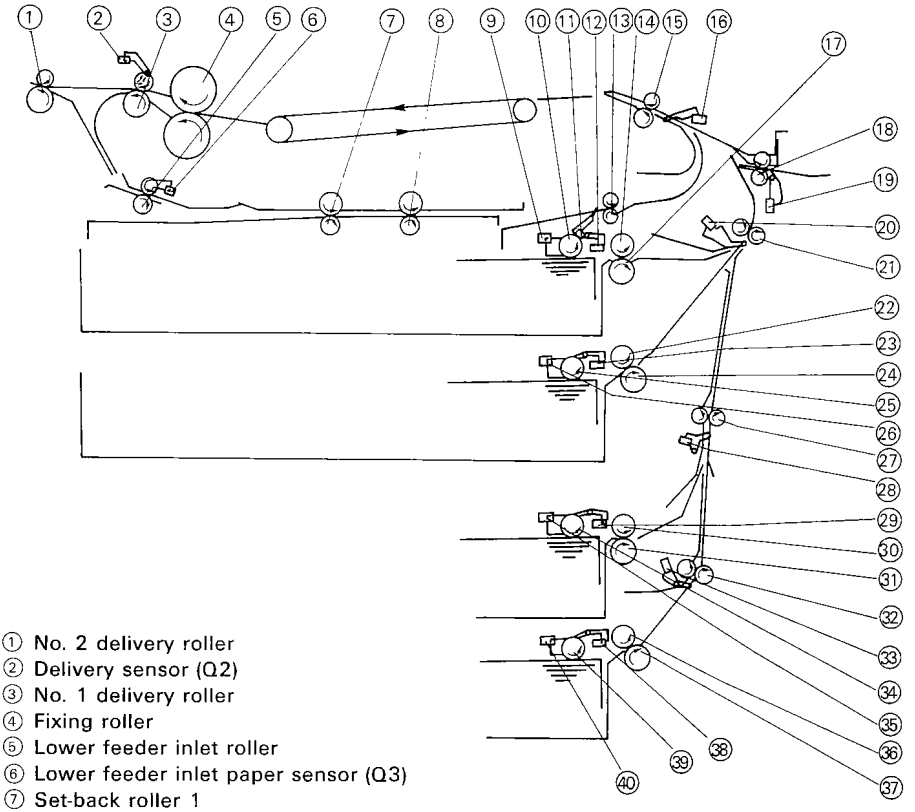

① No. 2 delivery roller
② Delivery sensor (Q2)
③ No. 1 delivery roller
④ Fixing roller
⑤ Lower feeder inlet roller
⑥ Lower feeder inlet paper sensor (Q3)
⑦ Set-back roller 1
⑧ Set-back roller 2
⑨ Cassette 1 lifter position sensor (Q12)
⑩ Cassette 1 pick-up roller
⑪ Lower feeder outlet paper sensor (Q14)
⑫ Cassette 1 paper sensor (Q10)
⑬ Lower feeder outlet roller
⑭ Cassette 1 feeder roller
⑮ No. 1 registration roller
⑯ Pre No. 1 registration paper sensor (Q5)
⑰ Cassette 1 separation roller
⑱ Manual pick-up roller
⑲ Manual feed paper sensor (Q4)
⑳ Pre No. 2 registration paper sensor (Q15)
㉑ No. 2 registration roller
㉒ Cassette 2 feeder roller
㉓ Cassette 2 paper sensor (Q11)
㉔ Cassette 2 separation roller
㉕ Cassette 2 pick-up roller
㉖ Cassette 2 lifter position sensor (Q13)
㉗ No. 3 registration roller
㉘ Pre No. 3 registration paper sensor (Q16)
㉙ Cassette 3 paper sensor (Q850)
㉚ Cassette 3 feeder roller
㉛ Cassette 3 separation roller
㉜ No. 4 registration roller
㉝ Pre No. 4 registration paper sensor (Q854)
㉞ Cassette 3 pick-up roller
㉟ Cassette 3 lifter position sensor (Q851)
㊱ Cassette 4 feeder roller
㊲ Cassette 4 separation roller
㊳ Cassette 4 paper sensor (Q852)
㊴ Cassette 4 pick-up roller
㊵ Cassette 4 lifter position sensor (Q853)

Figure 3-53 Arrangement of Roller Sensors in Copier and Cassette Feeding Unit

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B. Detection of Cassette Size

The cassette, when set in the cassette holder, actuates certain switches.

The microprocessor learns the size of the cassette and the presence or absence of a cassette through combinations of switches actuated as shown in Table 3-9. At the same time, the microprocessor makes decisions as to the counter, point of scanner reversal, and method of blank exposure control.

	Arrangement / Cassette size	SW 701 (left)	SW 702	SW 703	SW 704 (right)
	Cassette absent	0	0	0	0
	B5 (182×257)	0	0	0	1
*	U-L2 (203 – 220×317 – 354)	0	0	1	0
	A4 (210×297)	0	0	1	1
	B5R (257×182)	0	1	0	0
	B4 (364×257)	0	1	0	1
	B4R (297×210)	0	1	1	0
	A3 (420×297)	0	1	1	1
*	U-S1 (190 – 279×190 – 279)	1	0	0	0
*	U-S2 (190 – 279×190 – 279)	1	0	0	1
*	U-L1 (203 – 220×317 – 354)	1	0	1	0
	Letter 8.5″×11″ (216×279)	1	0	1	1
	STMT 5.5″×8.5″ (216×140)	1	1	0	0
	Legal 8.5″×14″ (356×216)	1	1	0	1
	Letter R 8.5″×11″ (279×216)	1	1	1	0
	Ledger 11″×17″ (432×279)	1	1	1	1

0 .... Indicates SW is OFF.
1 .... Indicates SW is ON.

* Sizes may be registered within the dimensions shown; for details, see p. 3-147.

(unit: mm)

Table 3-9

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C. Pick-Up from Cassette

The drive transmitted by rotating clutch 1 (CL2) is switched between cassettes 1 and 2 by pick-up drive switch solenoid 1 (SL6).

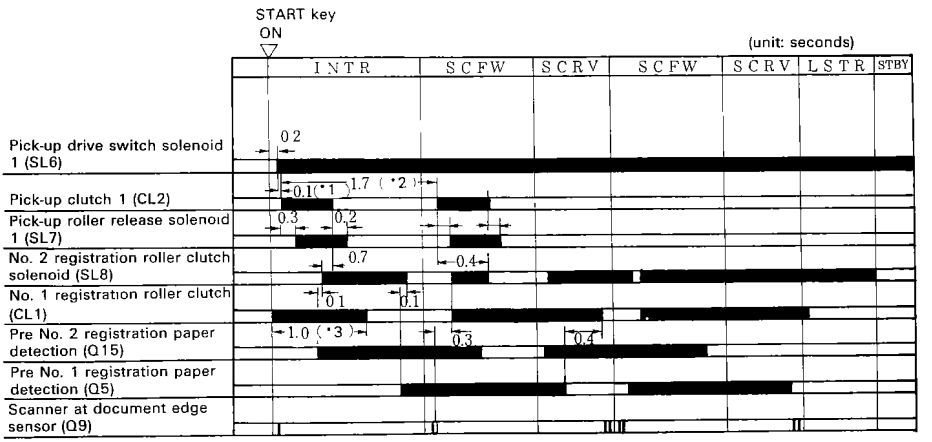
Cassettes 1 and 2 each have a lifter motor (M8, M9) which moves the lifter as long as it is supplied with power and a cassette is present.

At the time, a photointerrupter (Q10, Q11) detects the presence or absence of paper inside the cassette. The position of the lifter is detected also by a photointerrupter (Q12, Q13).

If the photointerrupter (Q10, Q11) does not detect paper, the DC controller judges that there is no paper and sends a message for the condition.

When the paper inside the cassette runs short during copy operation and the lifter position detection signal goes 'O', the lifter motor goes ON to raise the lifter. The signals goes OFF about 0.05 seconds after the position of the lifter is detected.

Should the lifter position detection signal remains 'O' even after the lifter motor has remained ON for a specified period of time, 'ADD PAPER' will be indicated on the message display.



*1 For pick-up from cassette 2, the pick-up clutch (CL2) goes ON 0.2 seconds after a press on the START key.

*2 Varies depending on paper length

$$\frac{\text{Paper length}^{*} \times 4/3}{224 \text{ mm/s}^{**}} + 400 \text{ ms}^{***}$$

* If 220 mm or less, 220 mm

** Feed speed of copy paper.

*** Warm-up time of scanner.

*3 Operation for setting the cross-way home position of the No 1 registration roller. (See p. 3-62)

Figure 3-54 A4, Two DIRECT, One-Side to One-Side Copies (pick-up from cassette 1)

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D. Pick-Up from Manual Feed Tray

1. Manual Feed

The manual pick-up roller is driven by the main motor and rotates when the No. 2 registration roller clutch solenoid is ON. The manual pick-up roller starts to rotate as soon as the manual paper sensor (Q4) detects copy paper.

The manual pick-up shutter rises after the manual pick-up sensor (Q4) has detected the trailing edge of the paper to prevent insertion of the next paper.

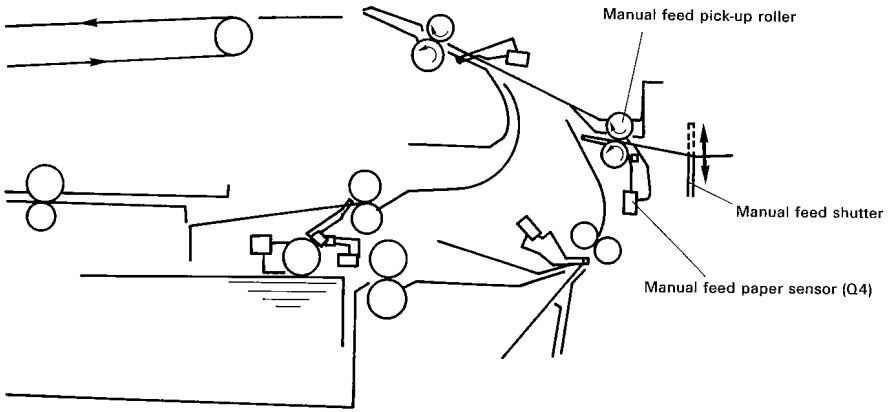

Figure 3-55

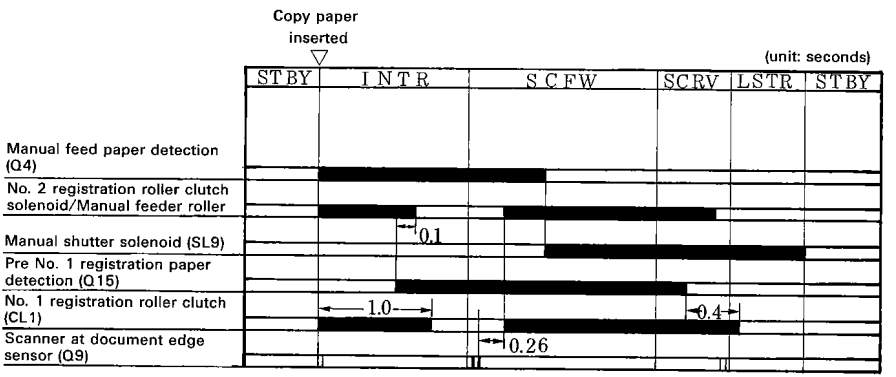

Figure 3-56

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2. Manual Feed from CD Unit Changer (NP-4835 only)

The manual feeder roller and CD unit changer feeder roller are driven by the horizontal move motor (M902).

The manual feed roller solenoid (SL904) goes ON when the CD unit manual feed sensor (Q960) has detected the copy paper and remained ON for 1 sec; the solenoid holds the paper, and the manual feed shutter solenoid (SL905) goes ON.

The manual feed switch solenoid (SL903) goes ON at the time the horizontal move motor (M902) rotates in normal/reverse direction to engage the gears, thereby transmitting the drive to the rollers; as a result, the paper is fed into the copier.

The paper fed to the manual feed sensor (Q4) in the copier is processed thereafter according to the manual feed sequence shown in Figure 3-56.

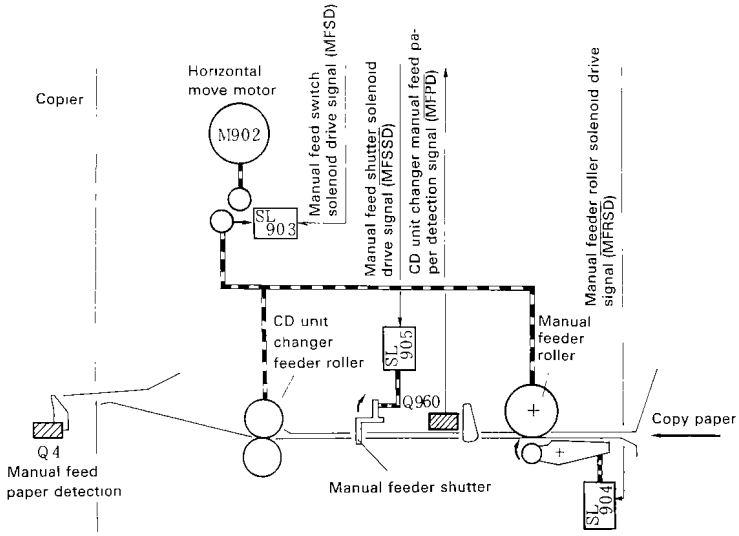

Figure 3-57

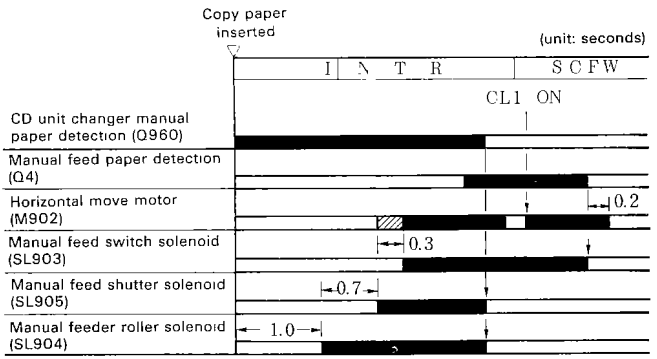

Figure 3-58

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E. Copy Operation for Single Overlay Copy

1. Outline

For the first side of a single overlay copy, the paper deflector is shifted up when the copy paper reaches the delivery unit, and the paper is sent to the lower feeder unit.

Thereafter, the paper forms a loop at set-back roller 1 and is sent to the lower feeder outlet roller through set-back roller 2.

The paper sent stops after it has moved about several millimeters from the lower feeder outlet roller to wait for copy operation on its second side. Meanwhile, the paper deflector is shifted down to be ready for delivery of the paper.

Copy on 1st side

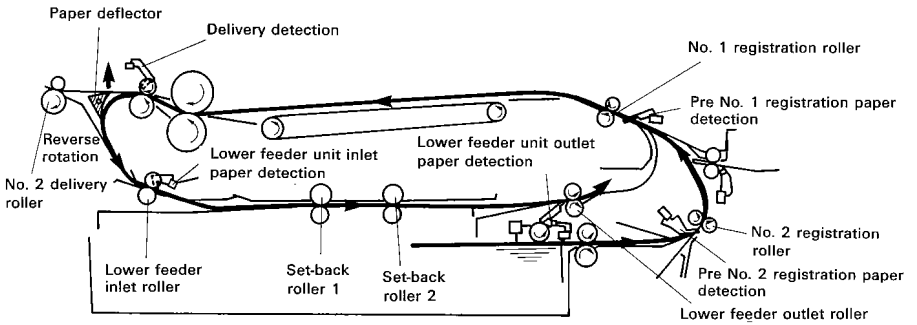
Paper deflector
Delivery detection
No. 1 registration roller
Pre No. 1 registration paper detection
Reverse rotation
No. 2 delivery roller
Lower feeder unit inlet paper detection
Lower feeder unit outlet paper detection
No. 2 registration roller
Pre No. 2 registration paper detection
Lower feeder outlet roller
Lower feeder inlet roller
Set-back roller 1
Set-back roller 2

Figure 3-59

Copy on 2nd side

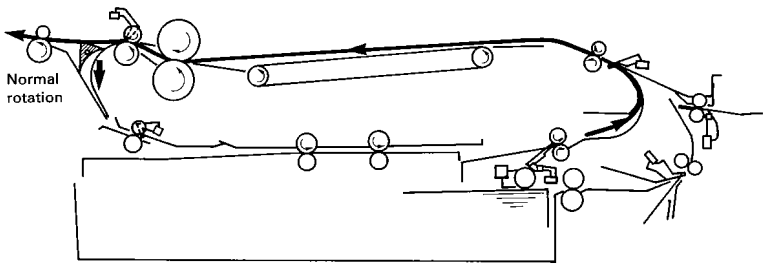

Figure 3-60

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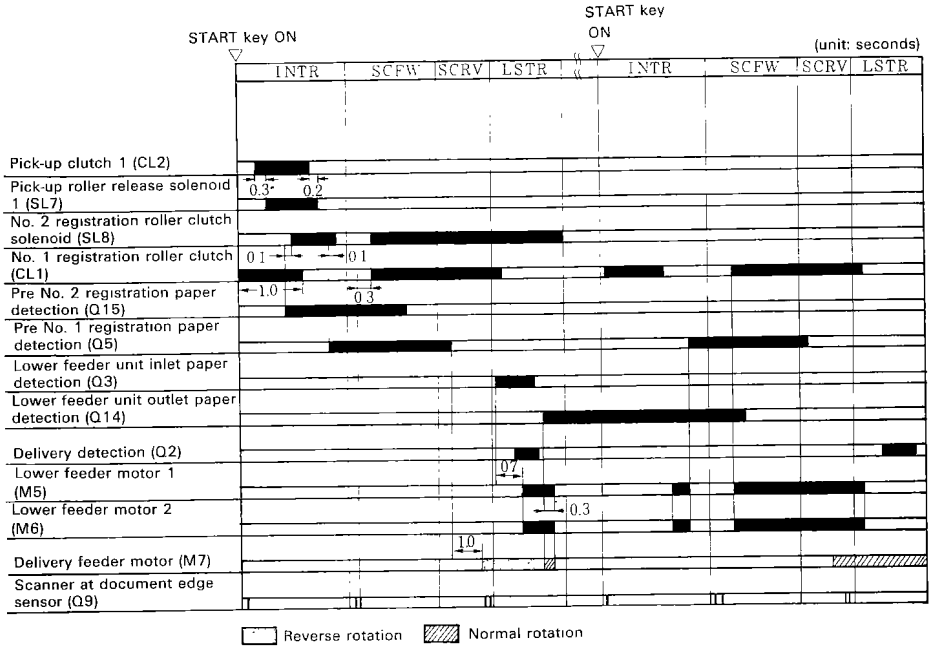

Figure 3-61 A4/Letter, Single DIRECT, Overlay Copy (pick-up from cassette 1)

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F. Copy Operation for Single Two-Sided Copy

1. Outline

For the first side of a two-sided copy (after fixing), the No. 2 delivery roller rotates in reverse 0.3 seconds after the trailing edge of the copy paper passes the delivery paper sensor, and the paper deflector is shifted up. This condition switches the paper back and sends it to the lower feeder unit.

The paper sent stops after it has moved several millimeters from the lower feeder outlet roller to wait for copy operation on its second side. Meanwhile, the paper deflector is shifted down to be ready for delivery of the paper.

Copy on 1st side

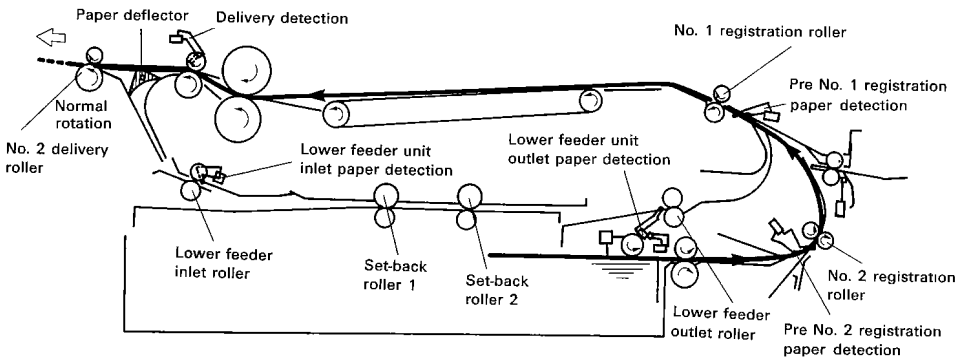
Paper deflector
Delivery detection
No. 1 registration roller
Pre No. 1 registration paper detection
Normal rotation
No. 2 delivery roller
Lower feeder unit inlet paper detection
Lower feeder unit outlet paper detection
Lower feeder inlet roller
Set-back roller 1
Set-back roller 2
No. 2 registration roller
Lower feeder outlet roller
Pre No. 2 registration paper detection

Figure 3-62

Copy on 1st side (at time of switch-back)

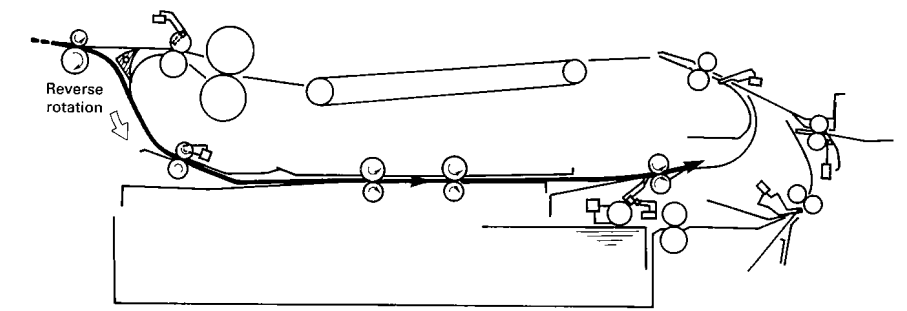

Figure 3-63

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Copy on 2nd side

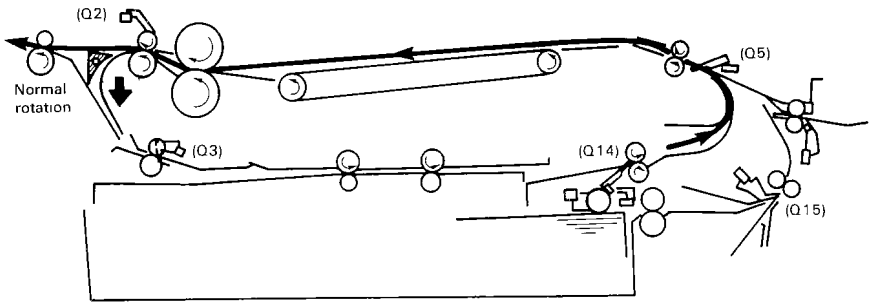

Figure 3-64

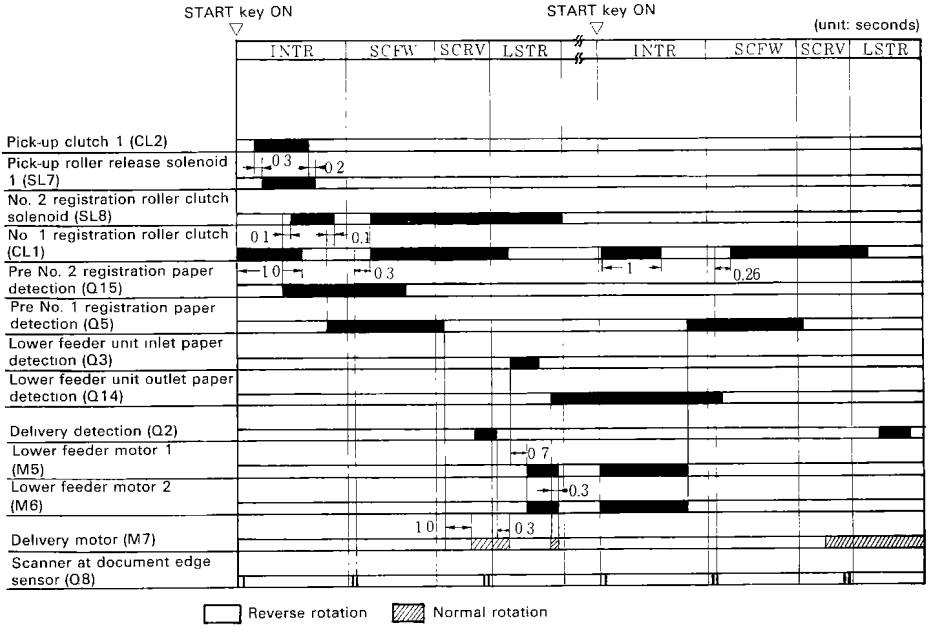

Figure 3-65 A4/Letter, Single DIRECT, Two-Sided Copy (pick-up from cassette 1)

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G. Set-Back Mechanism

1. Outline

The copier is equipped with a set-back mechanism for continuous copy operation for two-sided and overlay copies.

The set-back mechanism stacks up sheets of paper in the lower feeder unit so as to prevent double feeding likely in limited space.

The set-back mechanism is effective for the following conditions:

1. Paper size
   182 mm to 216 mm in feed direction
   257 mm to 297 mm in drum axial direction
2. 2 or more sheets up to 20

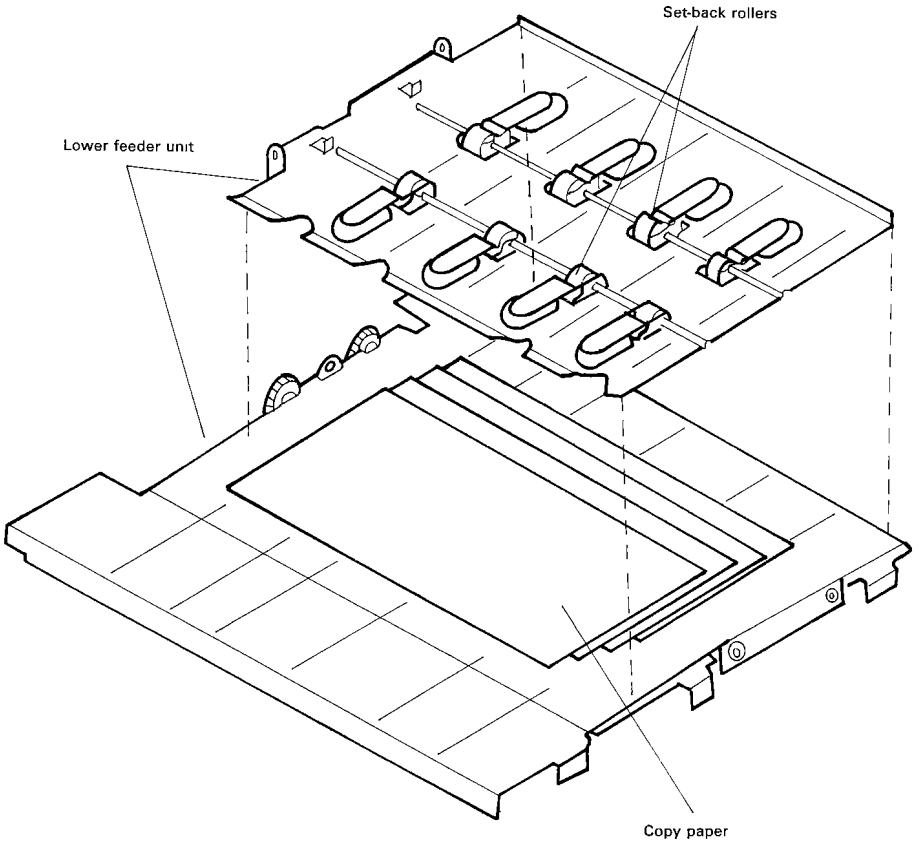

Figure 3-66

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2. Set-Back Operation for Two-Sided/Overlay Copies (1st side)

The set-back operation takes place as discussed below for A4/Letter, two two-sided/overlay copies. The lower feeder inlet roller is driven by the main motor; set-back roller, by the lower feeder motor 1; and the lower feeder outlet roller, by the lower feeder motor 2.

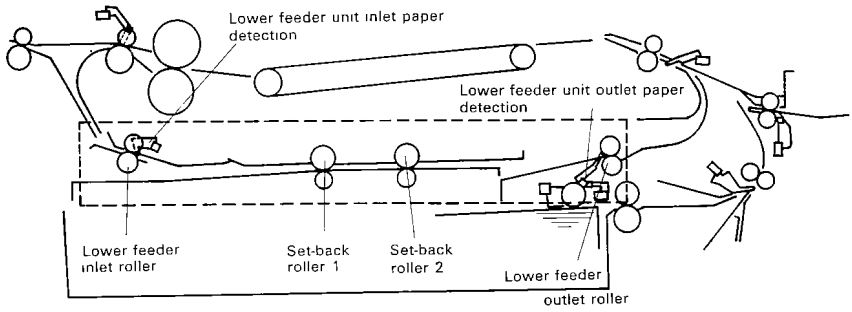
Lower feeder unit inlet paper detection
Lower feeder unit outlet paper detection
Lower feeder inlet roller
Set-back roller 1
Set-back roller 2
Lower feeder outlet roller

Figure 3-67

1) The first paper is sent to the lower feeder unit after its first side is processed and forms a loop at set-back roller 1.

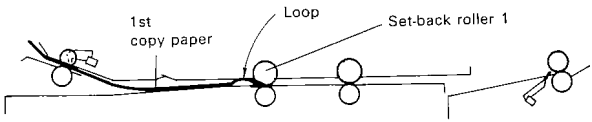

Figure 3-68

2) The first paper is moved forward and pulled out of the lower feeder unit inlet paper sensor.

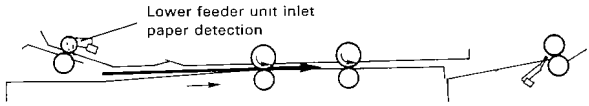

Figure 3-69

3) Set-back rollers 1 and 2 are rotated in reverse, and the first paper is stopped 11.2 mm from set-back roller 1.

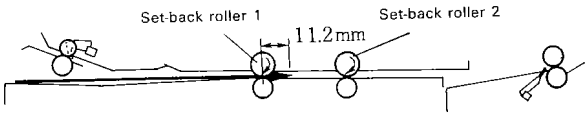

Figure 3-70

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4) The second paper forms a loop at set-back roller 1 after its first side has been processed.

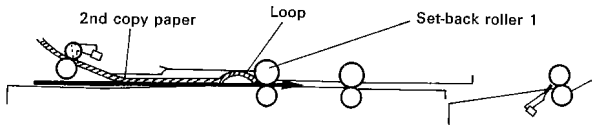

Figure 3-71

5) The first and second sheets of paper are moved forward and pulled out from the lower feeder unit inlet paper sensor.

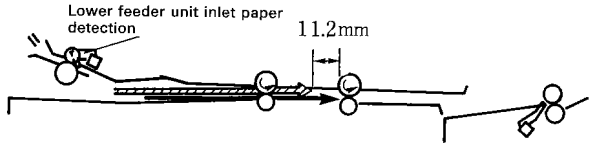

Figure 3-72

6) Set-back rollers 1 and 2 are rotated in reverse, and the second paper is stopped 11.2 mm from set-back roller 1.

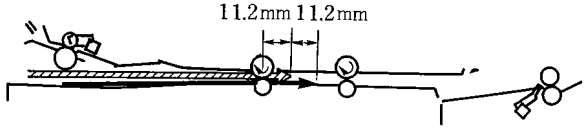

Figure 3-73

7) After the sheets of paper have been stacked up, the set-back roller is rotated in normal direction and stopped when the leading edge of the first paper reaches the lower feeder unit outlet paper sensor.

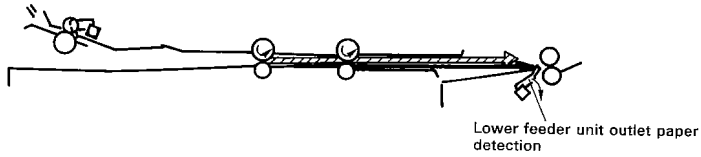

Figure 3-74

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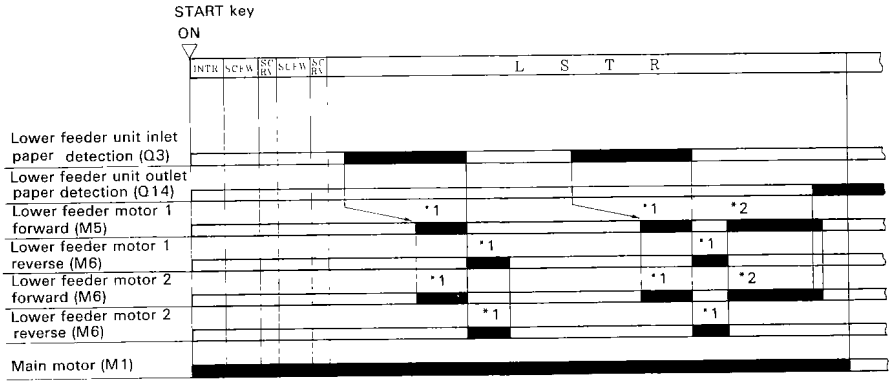

*1: Varies depending on length of copy paper.
*2. Varies depending on number of copies.

Figure 3-75 A4/Letter, Two DIRECT, Two-Sided/Overlay Copies (sequence up to lower feeder unit)

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3. Set-Back Pick-Up Operation for Overlay Copies (2nd side)

The following operations take place after the first and second sheets of paper have been processed on the first side and set back.

1) Set-back rollers 1 and 2 are rotated in reverse to return the leading edge of the first paper which has been set back, several millimeters from the point of lower feeder unit outlet paper detection.

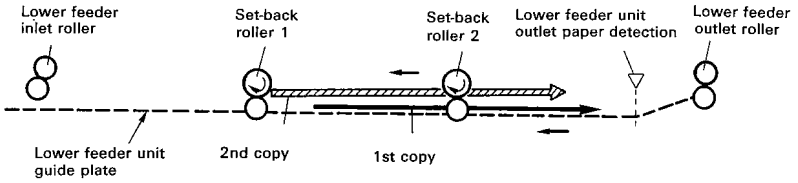

Figure 3-76

2) Set-back rollers 1 and 2 and lower feeder outlet roller are rotated about 54 mm* in the direction of the arrow (Figure 3-77) until the first paper has moved through set-back roller 2.

* Varies depending on the paper size.
Length -158 mm (between set-back roller 2 and lower feeder unit outlet paper sensor) +2 cm (margin)

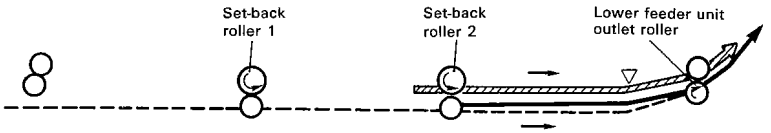

Figure 3-77

3) The lower feeder outlet roller is rotated in the direction of the arrow (Figure 3-78) and, at the same time, set-back rollers 1 and 2 are rotated in reverse to separate the first and second sheets of paper.

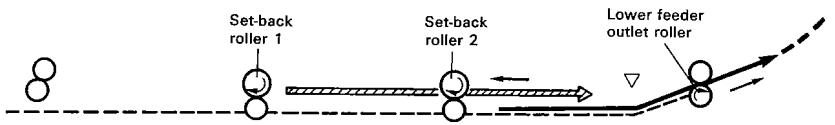

Figure 3-78

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4) The second paper is stopped when its leading edge has moved several millimeters from the lower feeder unit outlet paper sensor. The first paper is fed to the No. 1 registration roller.

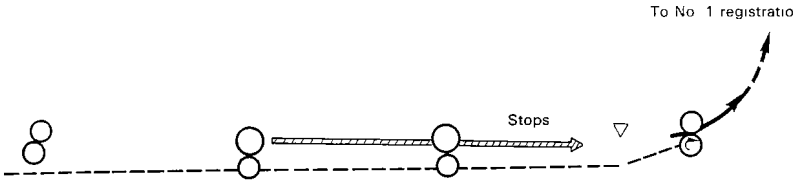

Figure 3-79

5) After the pre No. 1 registration roller sensor detects the first paper, set-back rollers 1 and 2 are rotated into the direction of the arrow (Figure 3-80) until the first paper has moved through set-back roller 2.

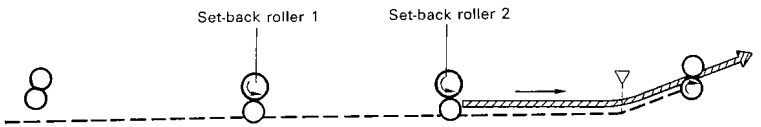

Figure 3-80

6) Thereafter, the second paper is fed to the No. 1 registration roller by the lower feeder outlet roller.

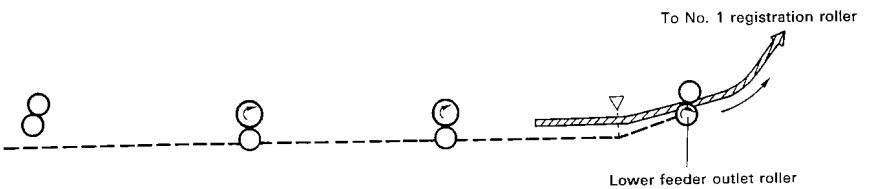

Figure 3-81

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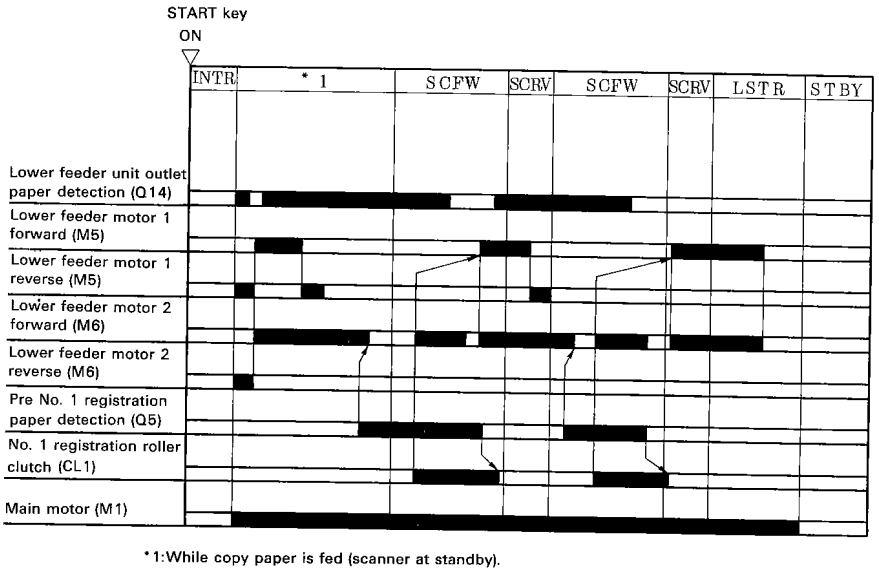

*1:While copy paper is fed (scanner at standby).

Figure 3-82 A4/Letter, Two DIRECT, Overlay Copies (pick-up from lower feeder unit)

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4. Set-Back Pick-Up Operation for Two-Sided Copies (2nd side)

The following operations take place after the first and second sheets of paper have been processed on the first side and set back.

1) Set-back rollers 1 and 2 are rotated in reverse to return the leading edge of the first paper, which has been set back, several millimeters from the lower feeder unit outlet paper sensor.

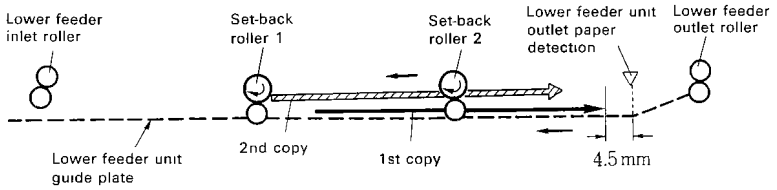

Figure 3-83

2) Set-back rollers 1 and 2 are rotated about 54 mm* in the direction of the arrow (Figure 3-84) until the first paper has moved through set-back roller 2.

* Varies depending on the paper size.
Length −158 mm (between set-back roller 2 and lower feeder unit outlet paper sensor)
+2 mm (margin)

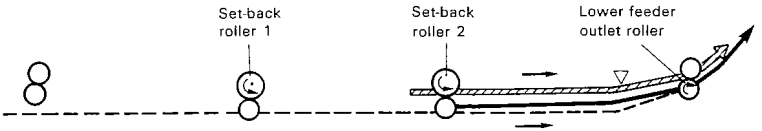

Figure 3-84

3) The lower feeder outlet roller is kept at rest and, set-back rollers 1 and 2 are rotated in reverse to move the first paper out of the lower feeder outlet roller.

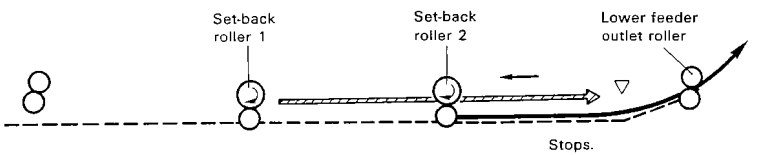

Figure 3-85

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4) The second paper is stopped when its leading edge has moved several millimeters from the lower feeder unit outlet paper sensor.

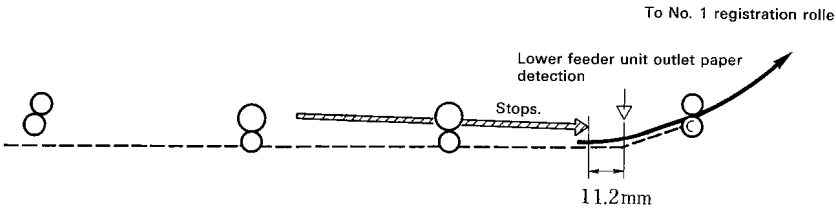

Figure 3-86

5) Set-back rollers 1 and 2 are rotated until the first paper moves through set-back roller 2 after the pre No. 1 registration roller paper sensor has detected the paper.

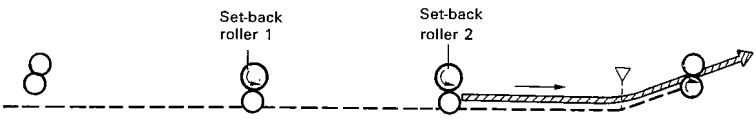

Figure 3-87

6) Thereafter, the second paper is fed to the No. 1 registration roller by the lower feeder outlet roller.

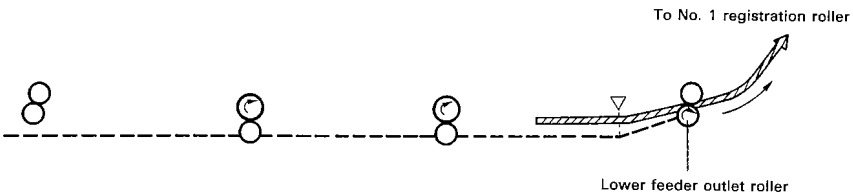

Figure 3-88

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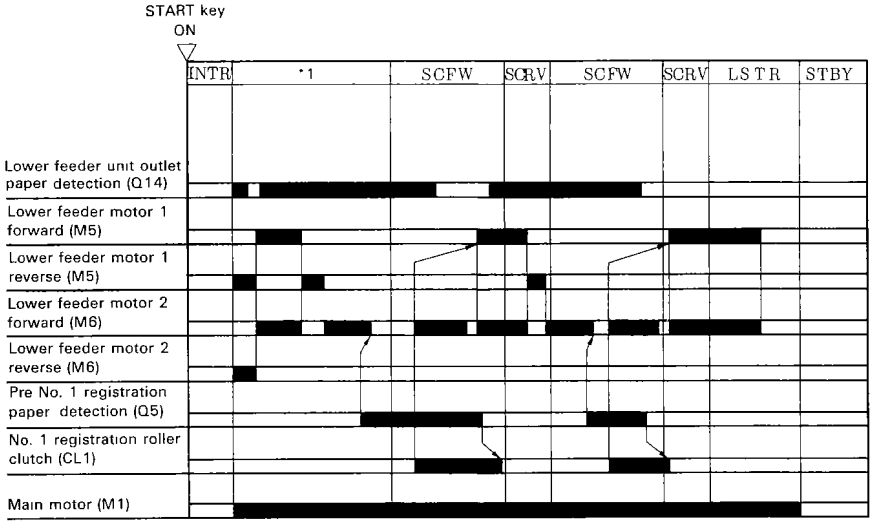

*1:When paper is being fed (scanner at standby).

Figure 3-89 A4/Letter, Two DIRECT, Two-Sided Copies (pick-up from lower feeder unit)

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H. Cross-Way Movement of No. 1 Registration Roller

1. Outline

The copier controls the No. 1 registration roller to move it in cross-way direction for each copy, thereby matching the edge of the image (cross-way direction) on the drum and that of the copy paper.

The cross-way registration motor (M4) is a stepping motor and drives the No. 1 registration roller in cross-way direction.

The drive from the cross-way registration motor (M4) is transmitted to gear C through gears A and B; gears B and C are a single entity. The rotation of gear C moves the No. 1 registration roller into cross-way direction. (See Figure 3-90.)

The home position of the No. 1 registration roller in cross-way direction is determined by having gear C butted against the stop plate; for this movement, the No. 1 registration is moved into the direction of the arrow (Figure 3-90) at the time the START key is pressed.

The edge of the paper is detected by the cross-way registration edge sensor (Q6). The No. 1 registration roller is rotated when the cross-way registration motor is turned ON so as to facilitate the cross-way movement of the roller. In the manual feed mode, however, the No. 1 registration roller is not controlled for cross-way direction.

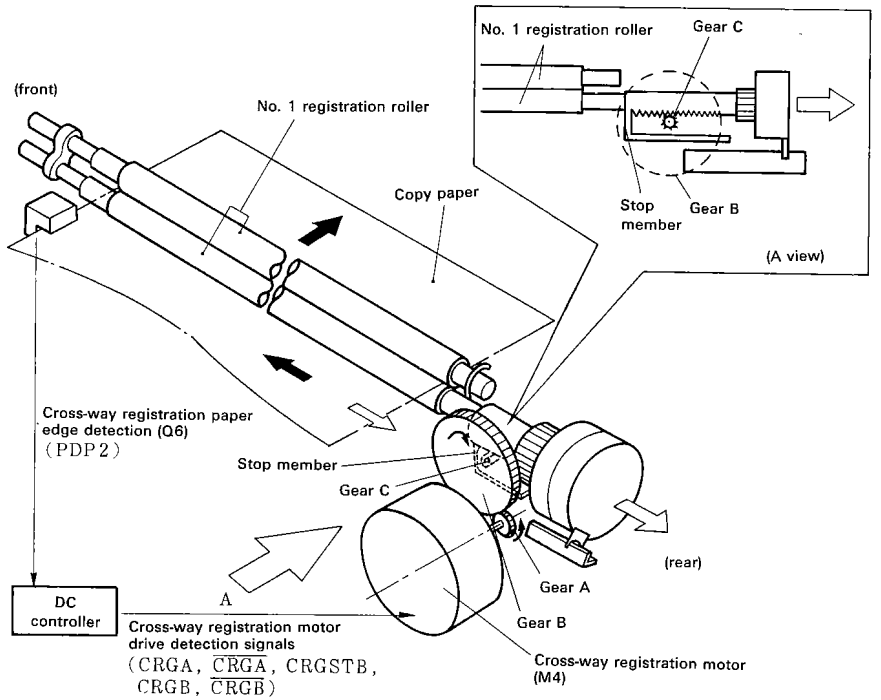

Figure 3-90 Sequence for No. 1 Registration Roller Cross-way Direction A4/Letter, Single, DIRECT, One-Sided to One-Sided copy (from Cassette 1)

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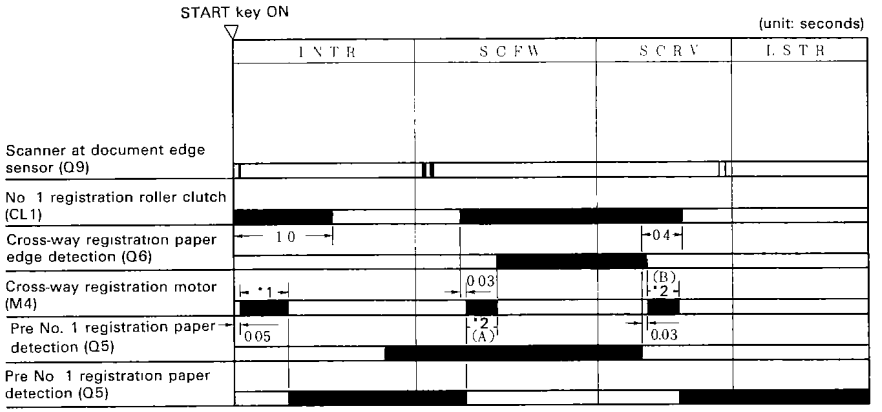

*1 Matches the home position for the No. 1 registration roller.
*2 (A) Time between when copy paper is at the home position of the No. 1 registration roller and when the cross-way registration paper edge sensor detects the paper
(B) Moves to the home position of the No 1 registration roller over a distance equivalent to the movement in (A).

Figure 3-91 A4/Letter, Single, DIRECT, One-Sided to One-Sided Copy (cross-way sequence for No.1 registration roller; pick-up from cassette 1)

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I. Fixing Assembly and Delivery Unit

1. Fixing Roller temperature control

The upper and lower roller of the fixing assembly and No. 1 delivery roller are driven by the main motor (M1).

The upper roller is heated by the fixing heater (H1, 800W), and its surface temperature is monitored by a thermistor (TH1).

Fixing assembly surface temperature high
└→ Thermistor (TH1) resistance low
└→ Fixing roller surface temperature detection signal (FRST) voltage low

Fixing assembly surface temperature low
└→ Thermistor (TH1) resistance high
└→ Fixing roller surface temperature detection signal (FRST) voltage high

Based on the voltage of FRST, the microprocessor on the DC controller controls the '1' and '0' states of the fixing heater drive signal ($\overline{HTRD}$) so as to keep the surface temperature of the upper roller at the specified value.

During standby and copy operation ..... control at 190°C
Standby key pressed .. control at 180°C

The copier is equipped with three types of protective mechanism to prevent the fixing heater from going awry.

- The microprocessor monitors the voltage of TH1 and performs self-diagnosis if in abnormal condition.
  E000, E001, E002, and E003 are indicated; at the same time, the microprocessor turns the power switch OFF automatically after about 20 seconds.
- If the voltage of TH1 lowers to 1.1 V (equivalent of 225°C) or less, the fixing heater protection circuit operates regardless of the output of the microprocessor and cuts off the drive power of SSR, which supplies the fixing heater with power.
- If the temperature inside the thermoswitch exceeds 240°C, the thermoswitch is turned OFF to cut the supply voltage to the fixing heater.

Note:
Once the contact of the thermoswitch (TS1) opens, the thermoswitch will not work unless it is cooled to 0°C or less. (The contact will not recover even cooled to room temperature.)
Once tripped thermoswitches must not be re-used.

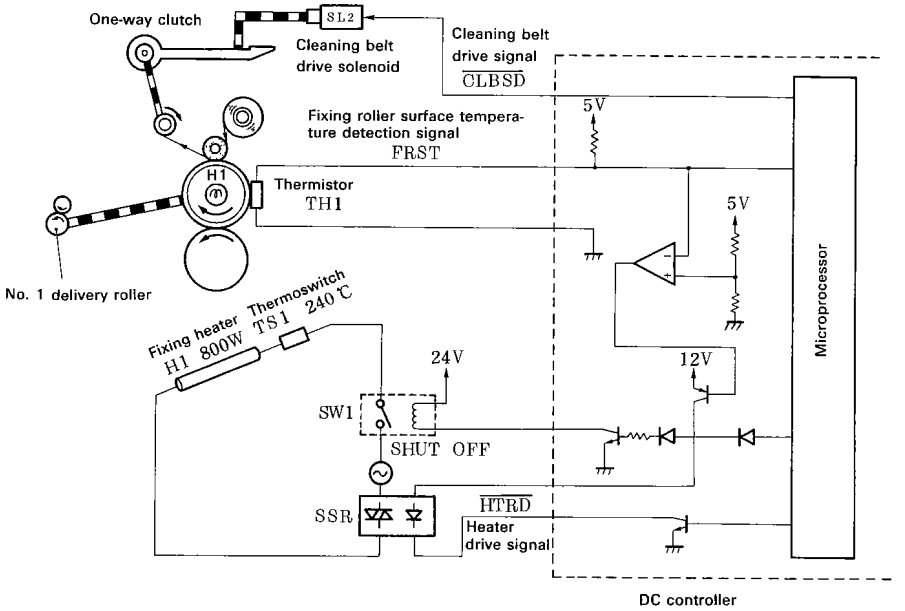

Figure 3-92

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2. Cleaning Belt

The cleaning belt used to clean the upper roller of the fixing assembly is operated by the drive solenoid (SL2); the solenoid is turned ON and OFF by the '1' and '0' states of the cleaning belt drive signal (CLBSD).

The cleaning belt is taken up 0.04 mm for each ON operation of the cleaning belt drive solenoid. The cleaning drive solenoid is turned ON and OFF so many times as necessary to suit the length of the copy paper. (See Table 3-10.)

Length of copy paper	ON and OFF of cleaning belt drive solenoid
Up to 216mm	2 times
216mm to 364mm	3 times
364mm and more	5 times

Table 3-10

Note:
In the manual feed mode, the cleaning belt drive solenoid is turned ON and OFF five times regardless of the length of the copy paper.

The DC controller counts how many times the cleaning belt drive solenoid is turned ON and, when the count reaches 300,000, it indicates 'BELT OUT' on the message display while in copy operation. Inform the customer to make a service call when this message appears. To check or clear the counter, enter the service mode.

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3. Sequence for Operations Related to Fixing Assembly

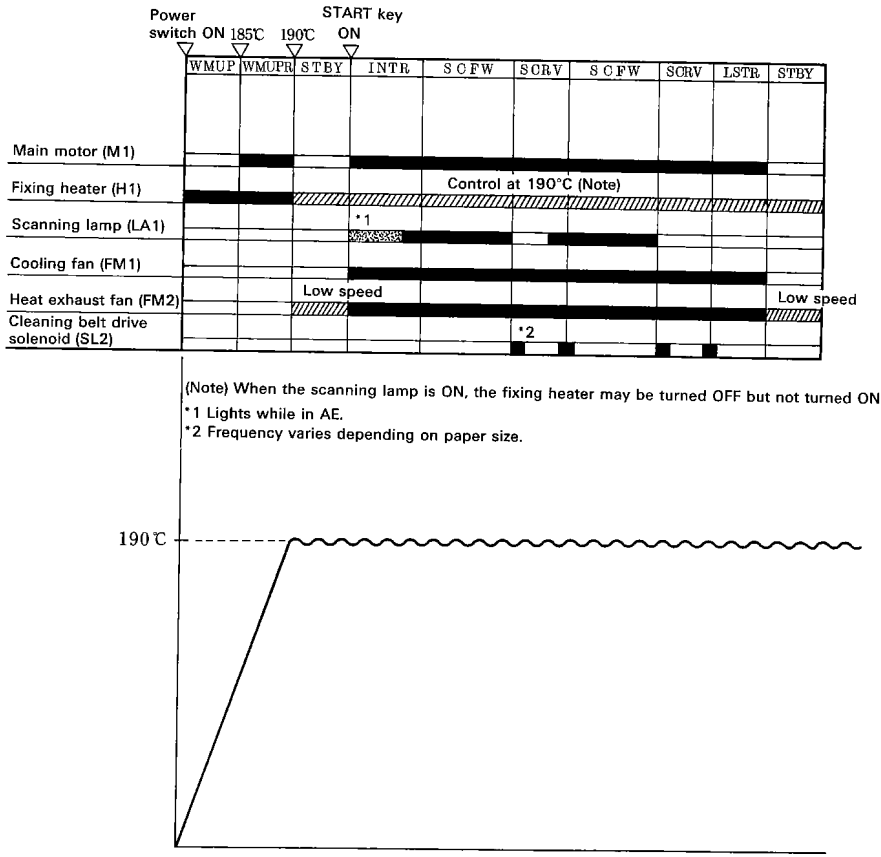

Figure 3-93

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4. Delivery Unit

The delivery feed motor is a 4-phase stepping motor.

As shown in Figure 3-94A, gear C is driven by the delivery feed motor. The direction of rotation of the No. 2 delivery roller (lower) and paper deflector is shifted in relation to the direction of rotation of the delivery feed motor.

The paper deflector is shifted as shown in Figures 3-94B, -94C, and -94D by the rotation of gear A. The shift determines whether the copy paper is sent to the lower feeder unit or delivered.

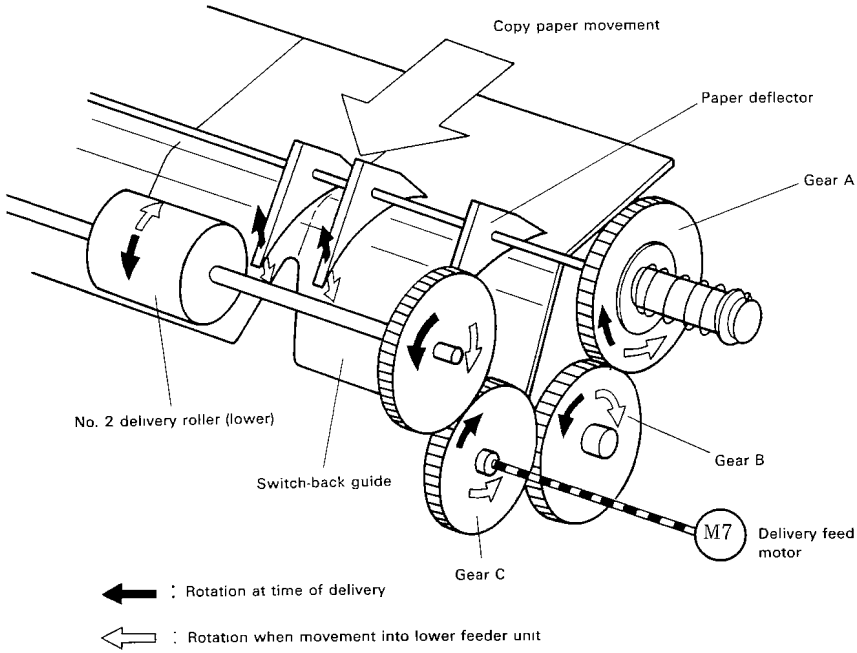

Figure 3-94A

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• Delivery

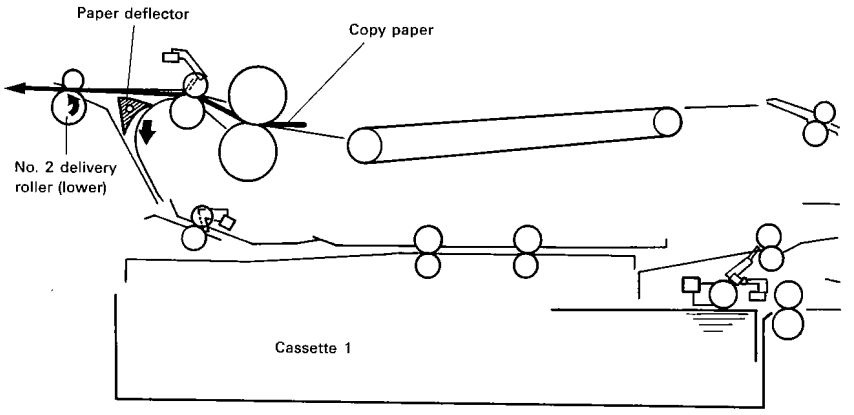

Figure 3-94B

• Movement into lower feeder unit (overlay copy)

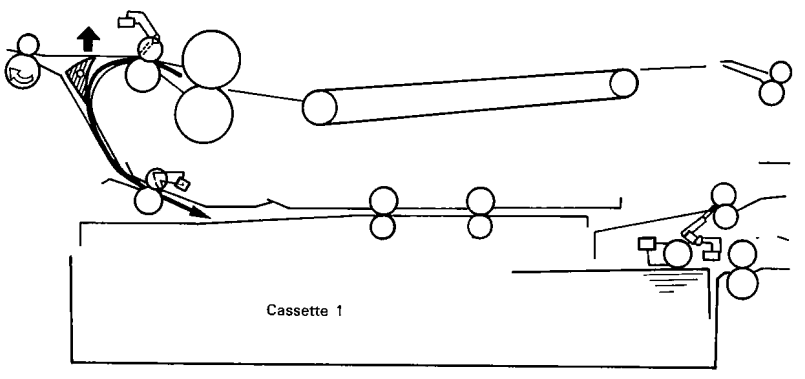

Figure 3-94C

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• Switch-back

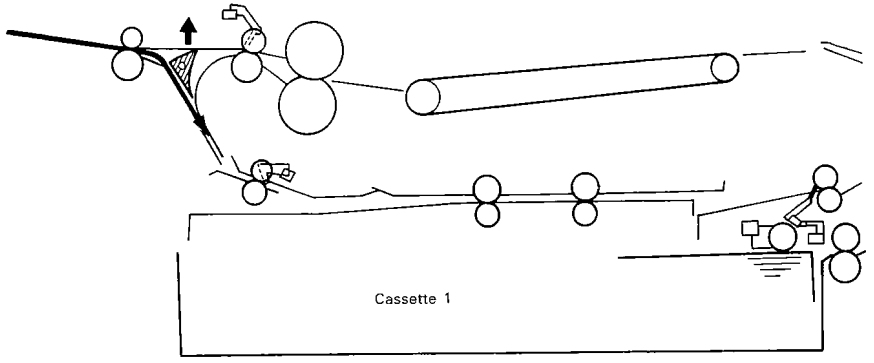

Figure 3-94D

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J. Detection of Jams

The following paper sensors are provided to check the presence and absence of copy paper and whether it is fed normally.

- Pre No. 1 registration sensor (Q5)
- Pre No. 2 registration sensor (Q15)
- Pre No. 3 registration sensor (Q16)
- Pre No. 4 registration sensor (Q854)
- Delivery sensor (Q2)
- Lower feeder inlet paper sensor (Q3)
- Lower feeder outlet paper sensor (Q14)
- Manual feed paper sensor (Q4)

The presence or absence of paper, or whether there is a jam or not, is judged in terms of whether there is paper at respective sensors at time of checks initiated by the program stored in the microprocessor.

The copier is designed to remember the number of copies remaining at time of a jam and the copy mode in effect so that the number of copies to make or the copy modes do not have to be entered newly even the copier is opened and closed for removal of jams.

In the following cases, the microprocessor judges the conditions to be jams; in addition, detection of paper by a sensor at time the copier is turned ON is judged as a jam. Opening of the upper right and lower doors, delivery door, manual feed tray cover, and cassette is also judged to be a jam.

1. Pre No. 1 Registration Delay Jam

The copy paper does not reach the pre No. 1 registration paper sensor (Q5) within the specified time after the No. 2 registration roller clutch solenoid (SL8) goes ON.

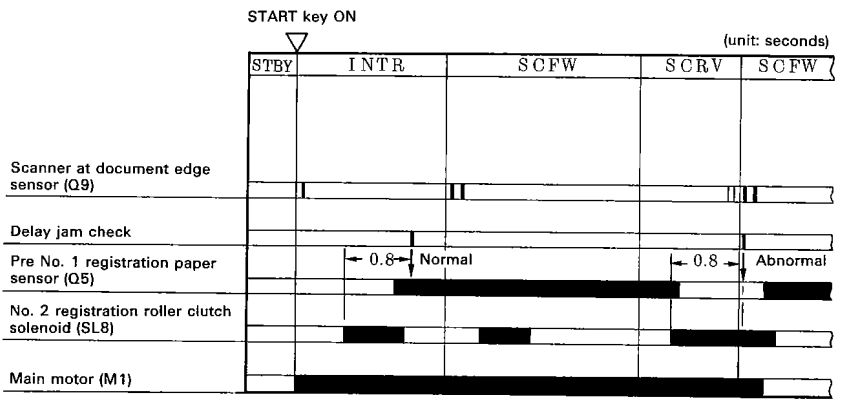

Figure 3-95

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2. Pre No. 1 Registration Early Arrival Jam

The copy paper reaches the pre No. 1 registration paper sensor (Q5) before the specified time after the No. 2 registration roller clutch solenoid (SL8) goes ON.

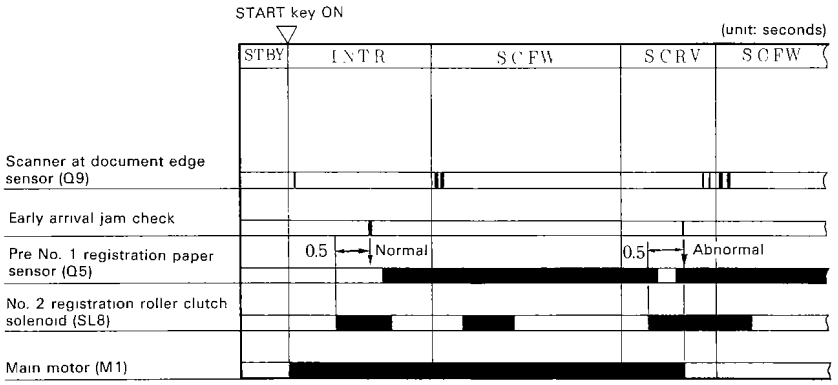
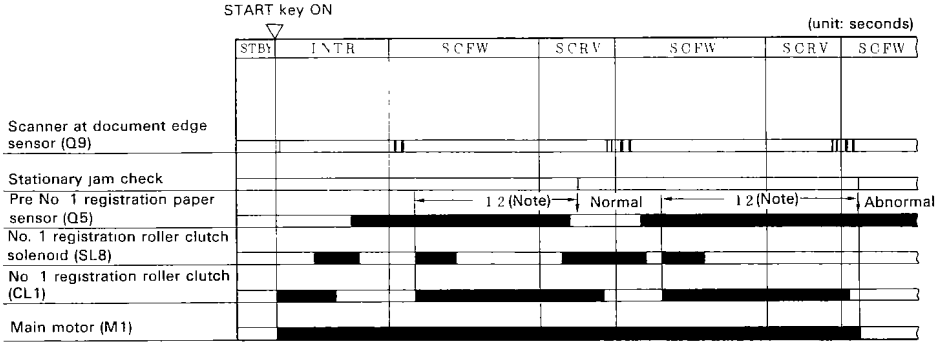


Figure 3-96

3. Pre No. 1 Registration Stationary Jam

The copy paper does not pass through the pre No. 1 registration paper sensor (Q5) within the specified time after the No. 1 registration roller clutch solenoid (SL8) goes ON.



Note. Varies depending on the length of paper. Above is when A4 is in use

Figure 3-97

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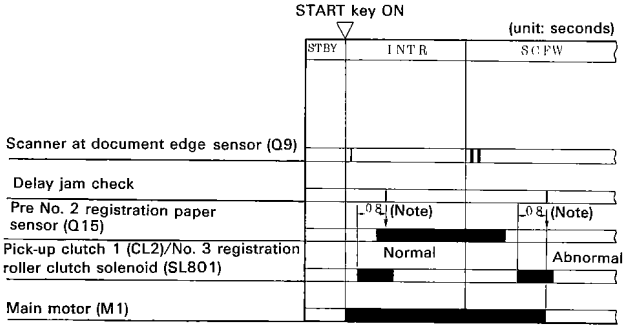
4. Pre No. 2 Registration Delay Jam

The copy paper does not reach the pre No. 2 registration paper sensor (Q15) within the specified time after the pick-up clutch 1 (CL2) or the No. 3 registration roller clutch solenoid (SL801) goes ON.

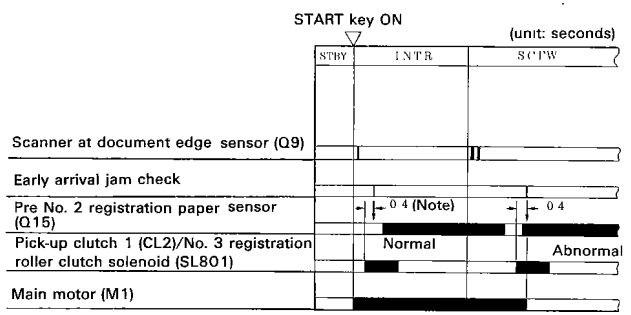


Note: Variable depending on location of paper feed. Above is when pick-up is from cassette 1.
- 1.0 sec when pick-up is from cassette 2.
- 1.1 sec when pick-up is from No. 3 registration roller.

Figure 3-98

5. Pre No. 2 Registration Early Arrival Jam

The copy paper reaches the pre No. 2 registration paper sensor (Q15) before the specified time after the pick-up clutch 1 (CL2) or No. 3 registration roller clutch solenoid (SL801) goes ON.



Note: Variable depending on location of paper feed. Above is when pick-up is from cassette 1.
- 0.5 sec when pick-up is from cassette 2.
- 0.6 sec when pick-up is from No. 3 registration roller.

Figure 3-99

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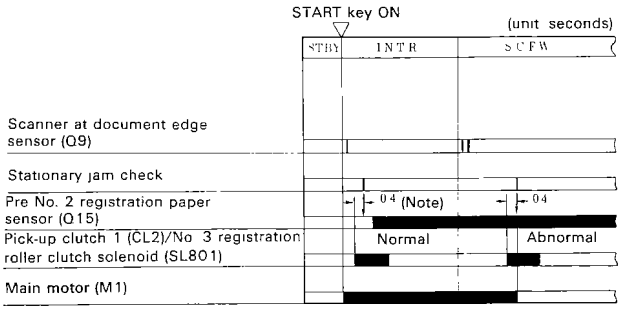
6. Pre No. 2 Registration Stationary Jam

The copy paper does not move through the pre No. 2 registration paper sensor (Q15) within the specified time after the pick-up clutch 1 (CL2) or No. 3 registration roller clutch solenoid (SL801) goes ON.

Checks for stationary jams are made at the same time for early arrival jams.



Note: Variable depending on location of paper feed. Above is when pick-up is from cassette 1.
- 0.5 sec when pick-up is from cassette 2.
- 0.6 sec when pick-up is from No. 3 registration roller

Figure 3-100

7. Pre No. 3 Registration Delay Jam

The copy paper does not reach the pre No. 3 registration paper sensor (Q16) within the specified time after the pick-up clutch 2 (CL801), No. 4 registration roller clutch solenoid (SL802) or paper deck pick-up clutch solenoid (SL701) goes ON.

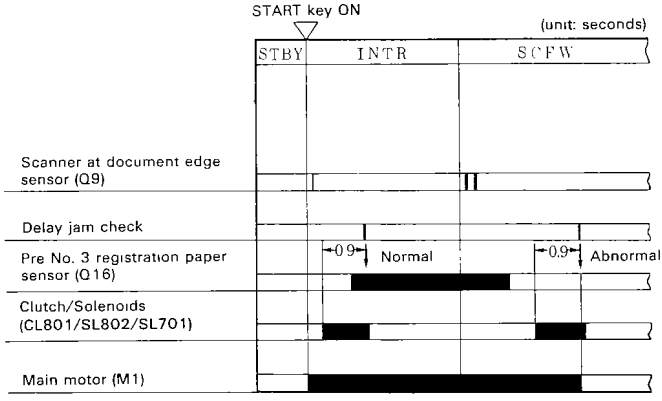


Figure 3-101

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8. Pre No. 3 Registration Early Arrival Jam

The copy paper reaches the pre No. 3 registration paper sensor (Q16) before the specified time after the pick-up clutch 2 (CL801), No. 4 registration roller clutch solenoid (SL802) or paper deck pick-up clutch solenoid (SL701) goes ON.

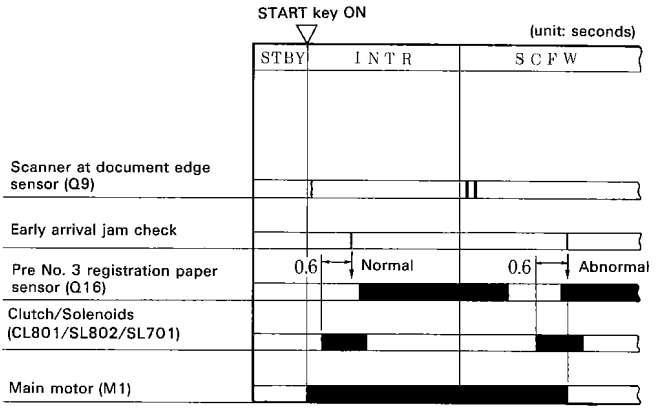

Figure 3-102

9. Pre No. 3 Registration Stationary Jam

The copy paper does not pass through the pre No. 3 registration paper sensor (Q16) within the specified time after the pick-up clutch 2 (CL801), No. 4 registration roller clutch solenoid (SL802) or paper deck pick-up clutch solenoid (SL701) goes ON.

Checks for stationary jams are made at the same time as for early arrival jams.

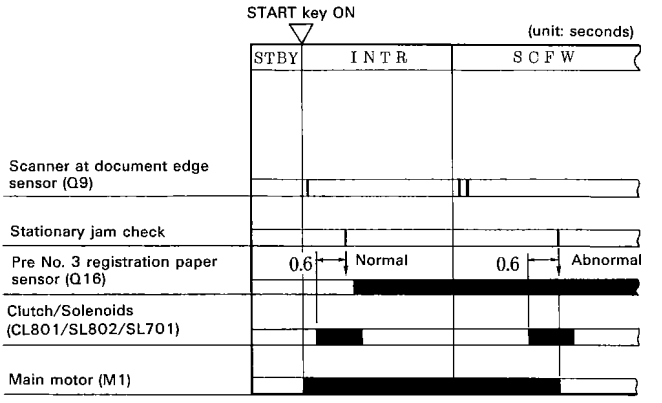

Figure 3-103

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10. Pre No. 4 Registration Delay Jam

The copy paper does not reach the pre No. 4 registration paper sensor (Q854) within the specified time after the pick-up clutch 2 (CL801) goes ON.

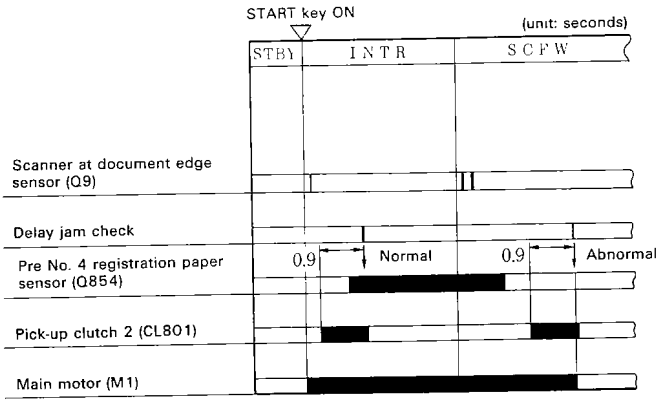

Figure 3-104

11. Pre No. 4 Registration Early Arrival Jam

The copy paper reaches the pre No. 4 registration paper sensor (Q854) before the specified time after the pick-up clutch 2 (CL801) goes ON.

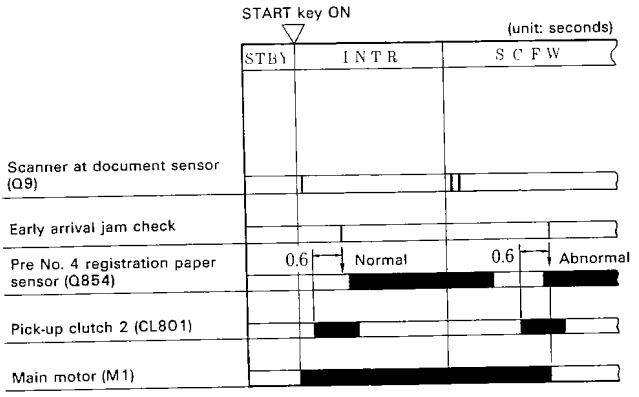

Figure 3-105

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12. No. 4 Registration Roller Stationary Jam

The copy paper does not move through the No. 4 registration paper sensor (Q854) after the pick-up clutch 2 (CL801) goes ON.

Checks for stationary jams are made at the same time as for early arrival jams.

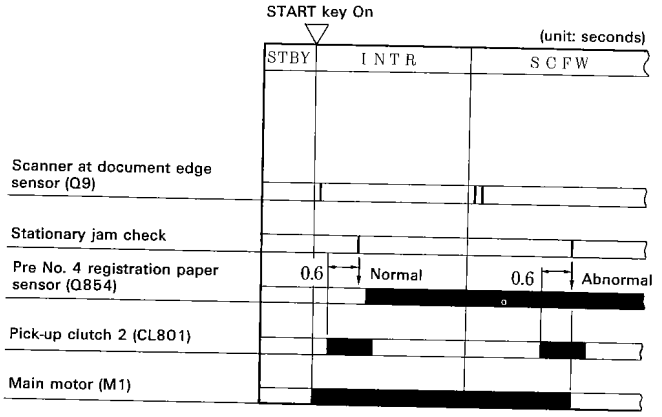

Figure 3-106

13. Delivery Delay Jam

The copy paper does not reach the delivery sensor (Q2) within the specified time after the No. 1 registration roller (CL1) goes ON.

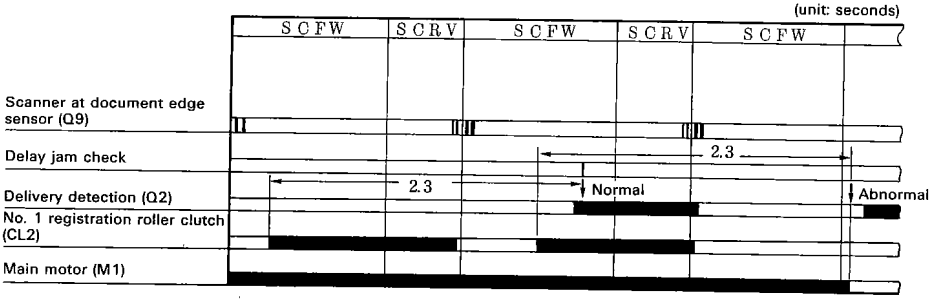

Figure 3-107

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14. Delivery Early Arrival Jam

The copy paper does not reach the delivery paper sensor (Q2) within the specified time after the No. 1 registration roller clutch (CL1) goes ON.

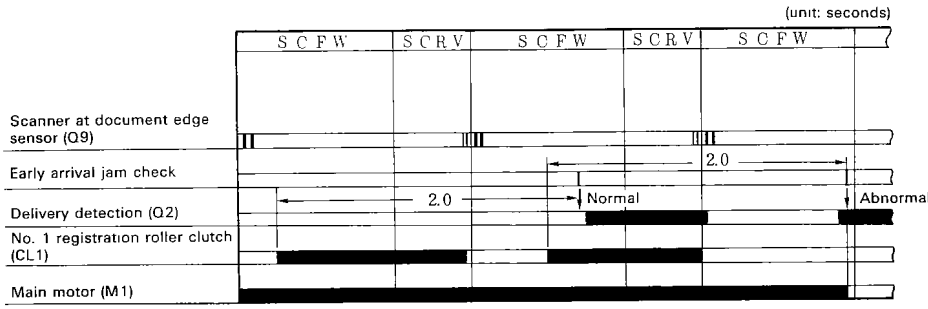

Figure 3-108

15. Delivery Stationary Jam

The copy paper does not pass through the delivery paper sensor (Q2) within the specified time after the No. 1 registration roller clutch (CL1) goes ON.

Checks for stationary jams are made at the same time as for early arrival jams.

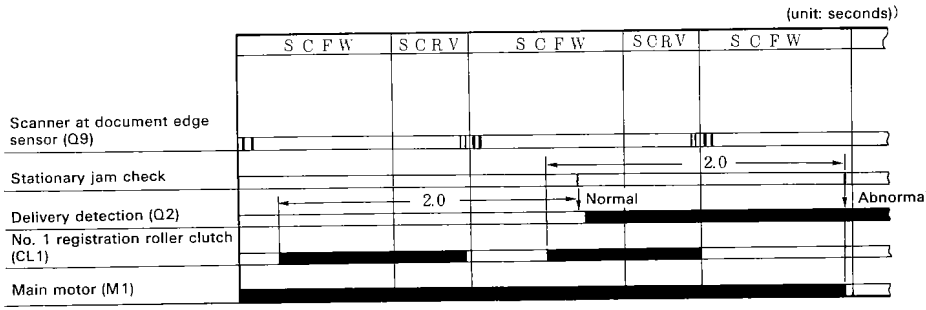

Figure 3-109

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16. Lower Feeder Unit Inlet Delay Jam

The copy paper does not reach the lower feeder unit inlet paper sensor (Q3) within the specified time after the delivery paper sensor (Q2) detects the leading edge of the paper.

Timing of checks for jams at time of overlay copy operation varies depending on paper sizes.

• Overlay copy

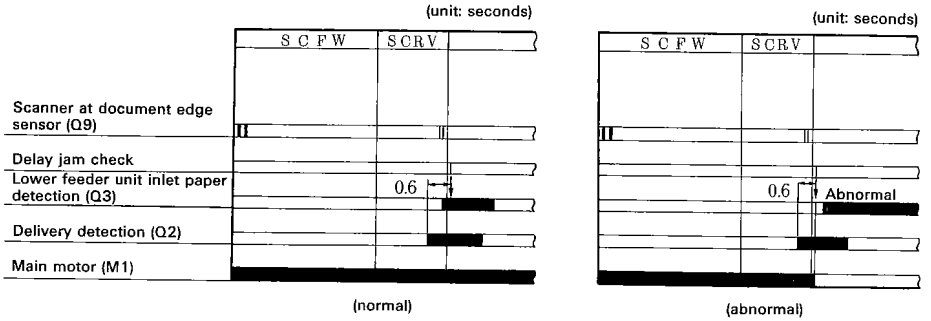
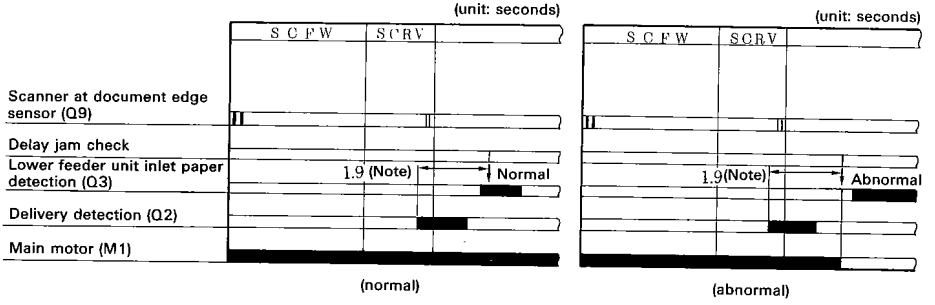


Figure 3-110

• Two-sided copy



Note: Varies depending on paper size. Above is when A4 is in use.

Figure 3-111

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17. Lower Feeder Unit Inlet Early Arrival Jam

The copy paper reaches the lower feeder unit inlet paper sensor (Q3) before the specified time after the delivery paper sensor (Q2) detects the leading edge of the paper.

Although timing of checks for jams is constant regardless of paper sizes at time of overlay copy, it varies depending on paper sizes at time of two-sided copy operation.

• Overlay copy

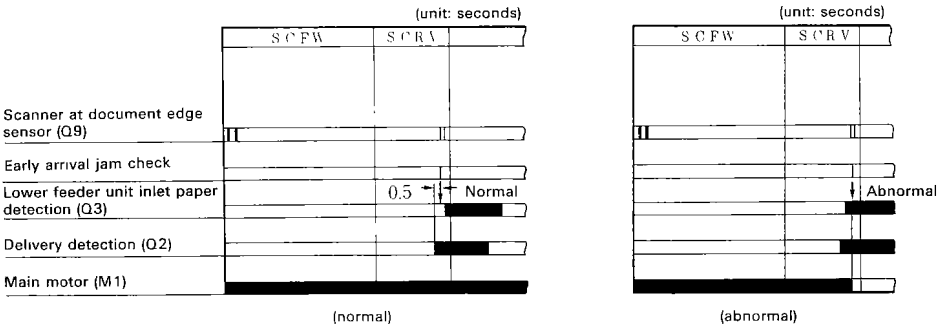
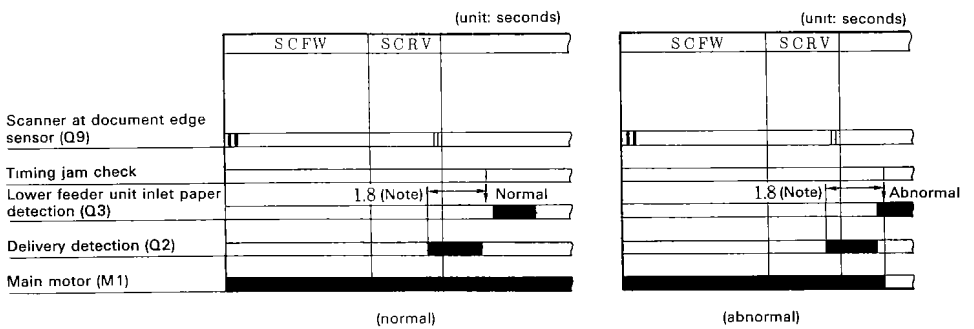


Figure 3-112

• Two-sided copy



Note: Varies depending on paper size. Above is when A4 is in use.

Figure 3-113

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18. Lower Feeder Unit Inlet Stationary Jam

The copy paper does not pass through the lower feeder unit inlet paper sensor (Q3) within the specified time after the delivery sensor (Q2) detects the leading edge of the paper. Checks for stationary jams are made at the same time as for early arrival jams.

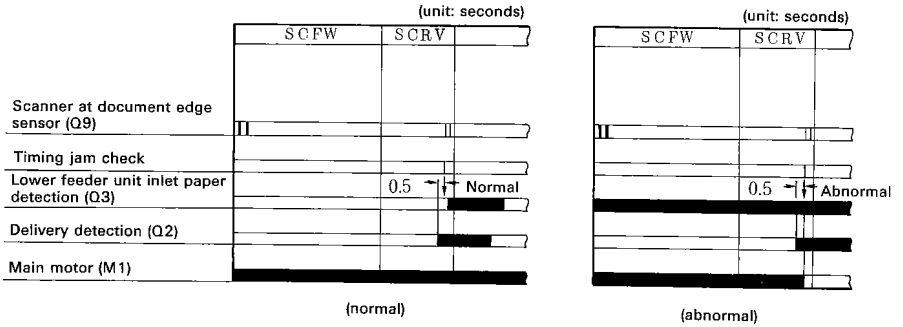
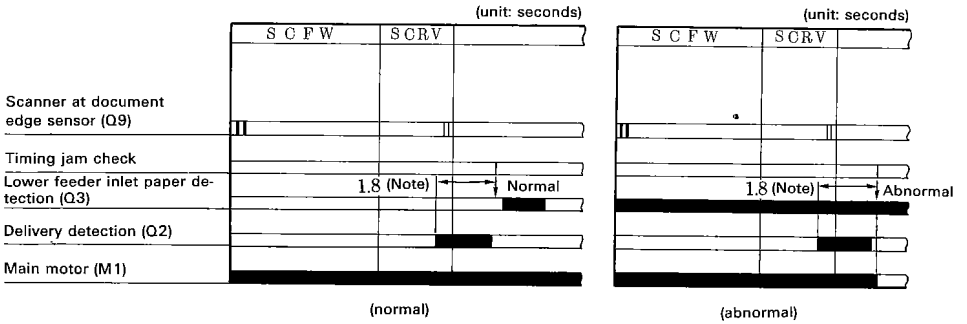


Figure 3-114

• Two-sided copy



Note: Varies depending on paper size. Above is when A4 is in use.

Figure 3-115

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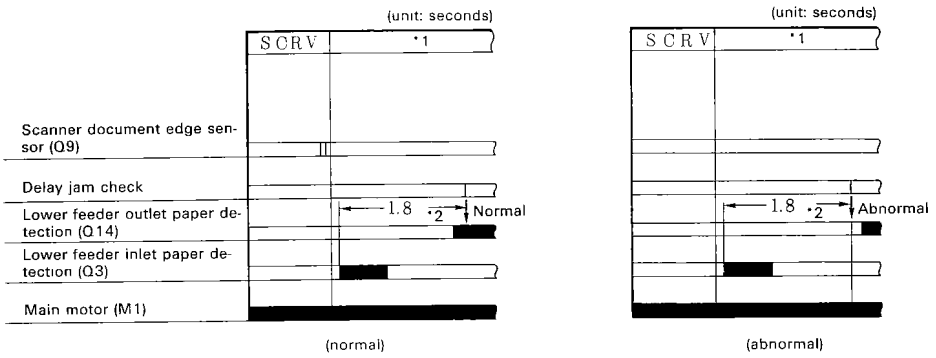
19. Lower Feeder Unit Outlet Delay Jam

The copy paper does not reach the lower feeder unit outlet paper sensor (Q14) within the specified time after the lower feeder unit inlet paper sensor (Q3) detects the leading edge of the copy paper.

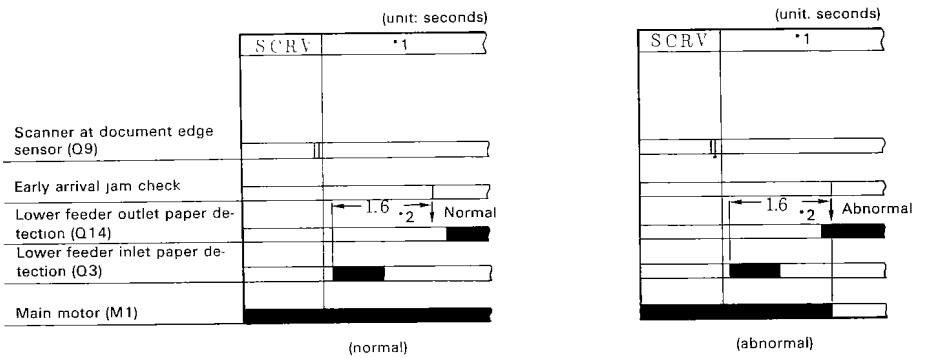


*1 While copy paper is fed (scanner at standby)
*2 Varies depending on number of copies. Above is when A4 (single copy) is in use.

Figure 3-116

20. Lower Feeder Unit Outlet Early Arrival Jam

The copy paper reaches the lower feeder unit outlet paper detection sensor (Q14) before the specified time after the lower feeder unit inlet paper detection sensor (Q3) detects the leading edge of the copy paper.



*1 While copy paper is fed (scanner at standby)
*2 Varies depending on number of copies Above is when A4 (single copy) is in use.

Figure 3-117

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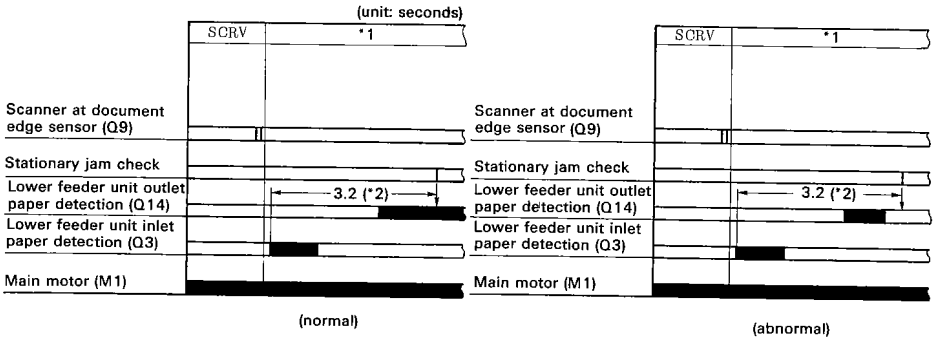
21. Lower Feeder Unit Outlet Stationary Jam

The copy paper does not pass through the lower feeder unit outlet paper sensor (Q14) within the specified time after the lower feeder unit inlet paper sensor (Q3) detects the leading edge of the copy paper.



*1 While copy paper is fed (scanner at standby).
*2 Varies depending on number of copies. Above is when A4 (single copy) is in use.

Figure 3-118

22. Manual Feed Delay Jam

The copy paper does not reach the manual feed paper sensor (Q4) within the specified time after the horizontal move motor (M902) of the CD unit changer goes ON. (NP-4835/4835i only)

If without the CD unit changer, the detection is over a delay at the No. 1 pre-registration roller; see Figure 3-95.

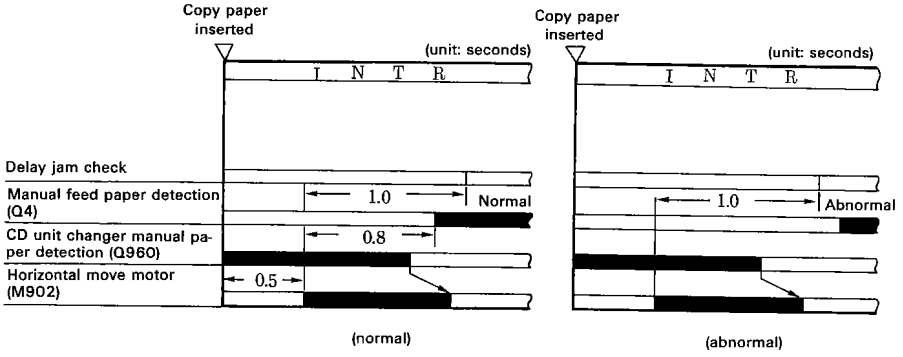


Figure 3-119

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23. Manual Feed Early Arrival Jam

The copy paper reaches the manual feed paper sensor (Q4) before the specified time after the horizontal move motor (M902) of the CD unit changer goes ON. (NP-4835/4835i only)

If without the CD unit changer, the detection is over an early arrival at the No. 1 pre-registration roller; see Figure 3-96.

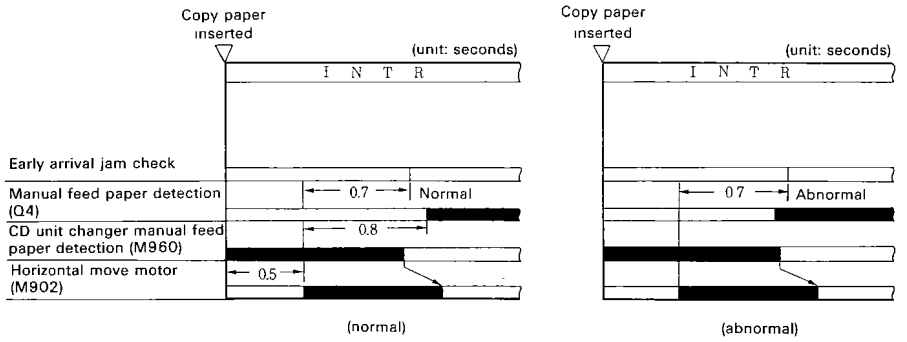

Figure 3-120

24. Manual Feed Stationary Jam

This jam is detected by "Pre No. 1 Registration Delay Jam." (See p. 3-70).

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V. POWER SUPPLY

A. Outline of Power Supply

■ NP-4835/4835i

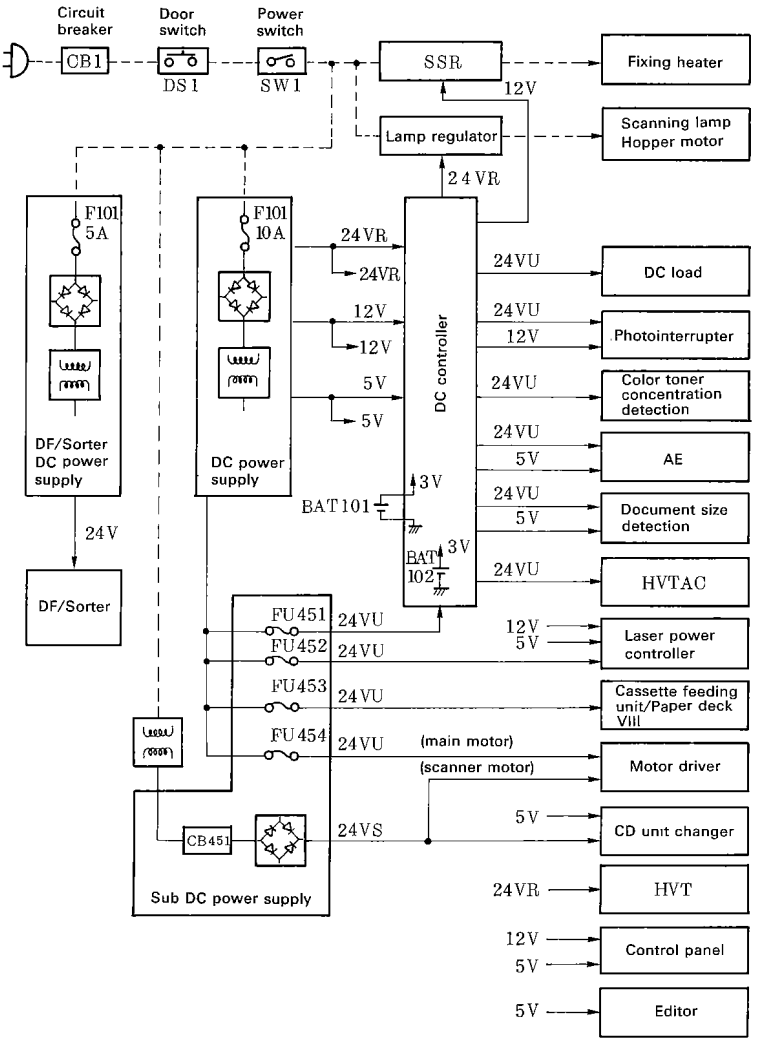

Figure 3-121

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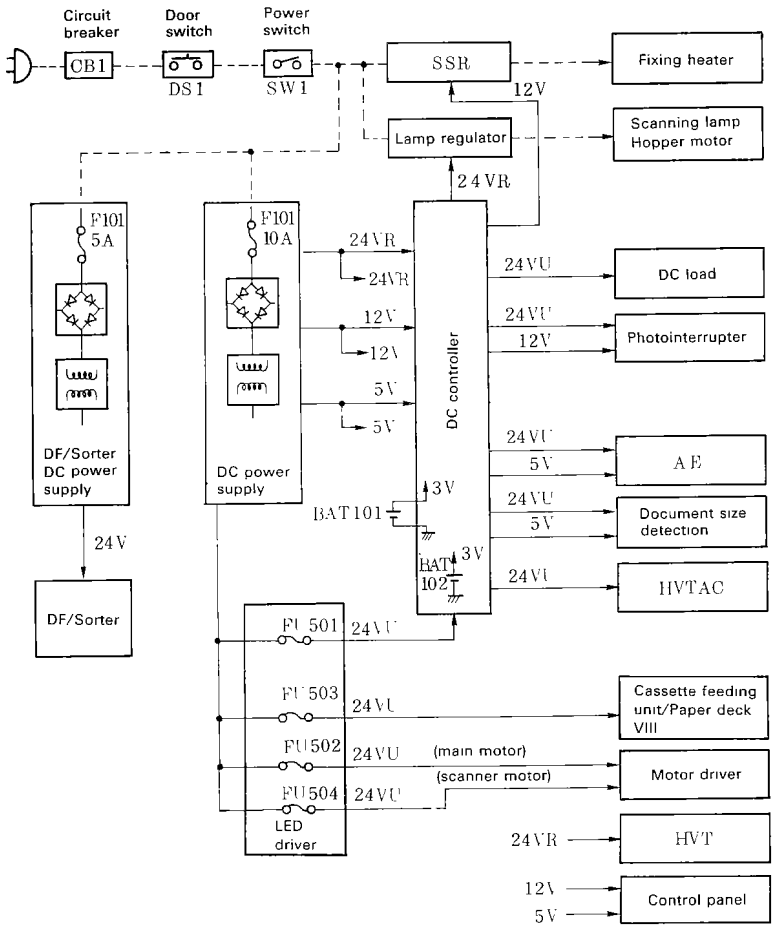

Figure 3-121A

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The DC power supply is provided with AC power when the door switch and power switch are turned ON; the DC controller serves to cause the power switch OFF as necessary if the auto shut-off mechanism is enabled.

The DC power supply makes available 24 VR, 24 VU, 12 V, and 5 V; 24 VU is sent to the DC controller by way of the fuse inside the sub DC power supply*.

* The sub DC power supply outputs 24 VS to provide the motor driver and CD unit changer with 24 V power.

The DC power supply for the DF/sorter provides the DFF and sorter with 24 V power.

The machine is deprived of DC power when the door switch or power switch is turned OFF. As such, lithium batteries are used as back-ups; BAT102 for the RAM in the DC controller, and BAT101 for the date/time display.

Note:
The sub DC power supply is found only in the NP-4835/4835i; the NP-4835S/4335 provides the DC controller with 24 VU by way of the fuse inside the LED driver.

B. Protection of Power Supply Circuit

The DC power supply and DC power supply for document feeders and sorters are equipped with an over-current detection circuit which, if any of the loads over-circuits for some reason, activates the protection mechanism to stop the output.

The output, after suspension, can be restored by opening the front door, turning the door switch OFF, correcting the load, and turning the door switch ON once again. Repeated over-circuiting of loads or repeated over-circuiting and restoring operations can trigger melting of the buit-in fuses.

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VI. EDITOR (NP-4835/4835i only)

A. Outline

1. Electrical Circuitry

The electrical control of the editor of the copier is performed by the editor controller PCB. The editor controller PCB has a microprocessor which, according to the programs stored in advance, reads the locations pressed with the cordless pen by means of a plane-shaped resistor and sends signals to the copier as necessary.

2. Communication with Copier

The transmission of signals between the editor and copier is in serial as shown in Figure 3-122. The editor is supplied with power by the copier, and the 5V DC received is converted to 3.5V DC inside the editor controller PCB.

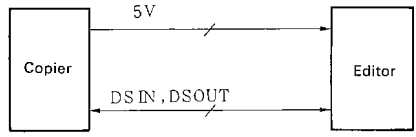

Figure 3-122

3. Input to and Output from Editor Controller PCB

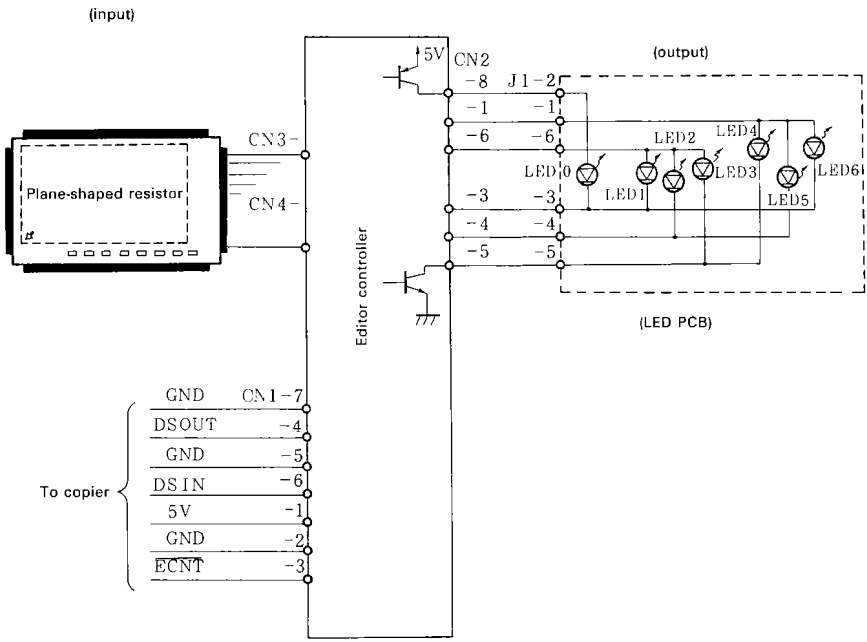

Figure 3-123

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4. Basic Construction of Editor

The editor consists of a tablet and cordless pen.

Figure 3-124 shows the basic construction of the tablet. The tablet is of a layered construction and is composed of, from top to bottom, a protection sheet, X plane-shaped resistor, Y plane-shaped resistor, and fixing plate (Figure 3-124A).

The Y plane-shaped resistor is provided with bosses called dot spacers. The dot spacers are arranged over the Y plane-shaped resistor, and they serve to prevent contact between the X and Y plane-shaped resistors in the absence of pressure on the tablet.

A tablet is also placed under the editor control panel, i.e., STOP/CLEAR, MEMORY, four COLOR CONVERSION keys, as well as under the sheet on which a document is placed.

The editor controller serves to read the location specified by the cordless pen in terms of area designation or input from the keys mentioned above.

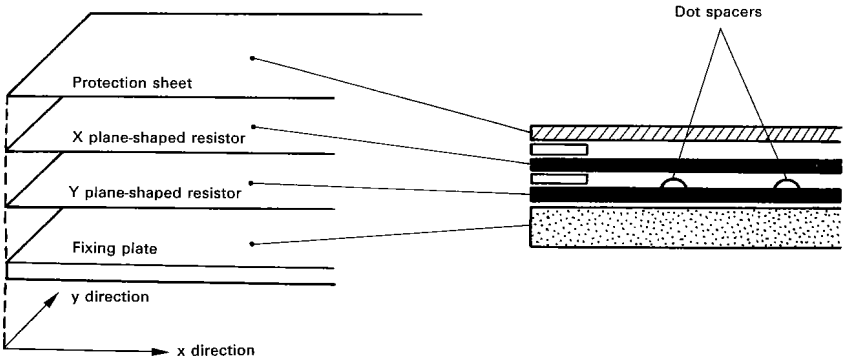

Figure 3-124A

Figure 3-124B

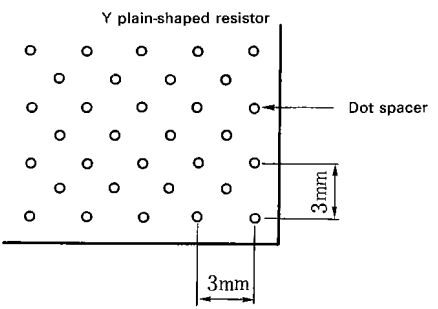

Figure 3-124C

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B. Construction of Electrical Circuitry

1. Reading Input Operations

The editor detects presses made with the cordless pen as described below.

Figure 3-125 shows the equalization circuit of the comparator. (SW1 is ON; SW2, SW3, SW 4 are OFF.)

The negative side of the comparator receives voltages Ra, Rb, Rc, and Rd. (Rc is contact resistance.)

The reference value of the comparator, on the other hand, is determined in relation to R_1 and R_2, and received on the positive side.

When the tablet is pressed with pressure greater than a specified value and contact resistance Rc in turn decreases, the voltage on the negative side of the comparator increases.

This causes output V_0 of the comparator to go from H to L, and the microprocessor judges the condition to be a press by the cordless pen.

2. Reading X Coordinates

Figure 3-126 shows the equalization circuit of the tablet. (SW1 and SW2 are ON; SW3 and SW 4 are OFF.)

The SWs are shifted as shown in Figure 3-126, and the pressure divided between resistance Ra and Rb is guided to the A/D converter. The microprocessor reads the condition in terms of X coordinates.

The input impedance of the A/D converter is appreciably large and, as such, variation of Rc (contact resistance) will not affect the X coordinates.

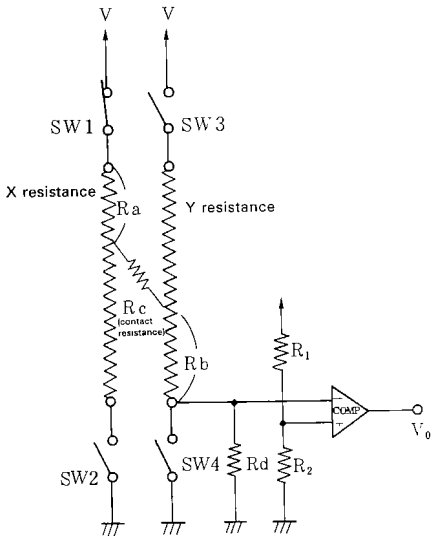

Figure 3-125 Equalization Circuit of Comparator

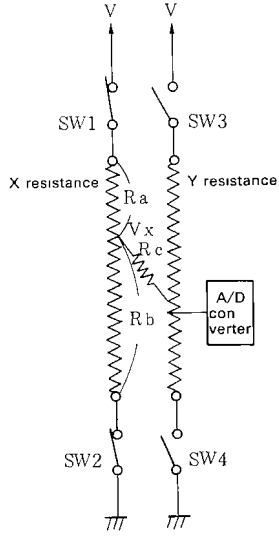

Figure 3-126 When Reading X Coordinates

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3. Reading Y Coordinates

The SWs are shifted as shown in Figure 3-127, and the Y coordinates are read in the same way as X coordinates. (SW1 and SW2 are OFF; SW3 and SW4 are ON.)

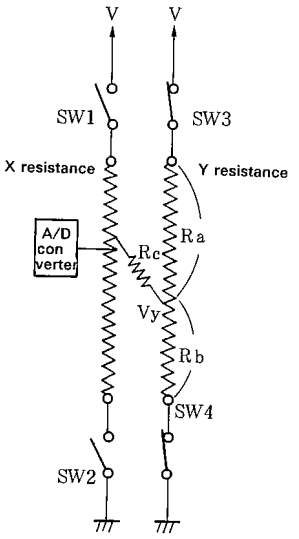

Figure 3-127 When Reading Y Coordinates

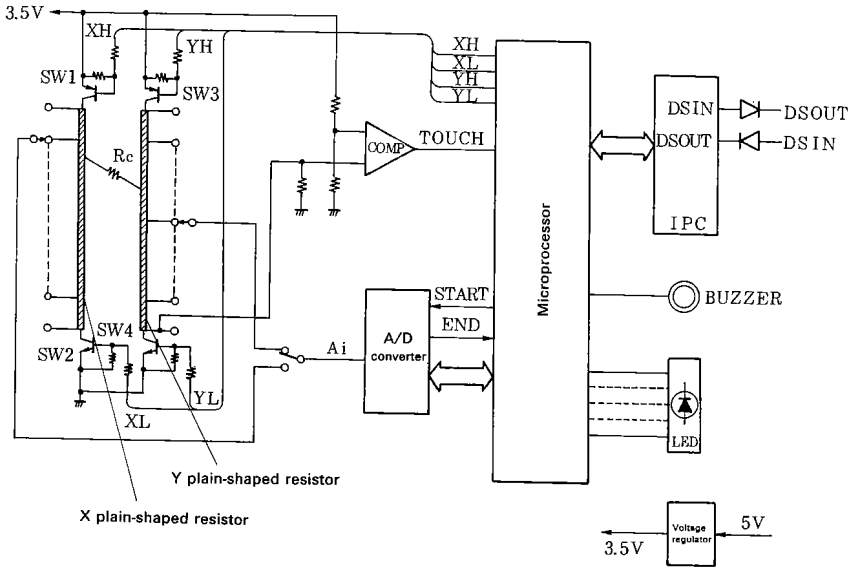

Figure 3-128 Block Diagram of Tablet and Editor Controller

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VII. CD UNIT CHANGER (NP-4835/ 4835i only)

For the manual feed mechanism, see p.3-47.

A. Outline

The copier may be fitted with up to three CD units and sets them in and out inside it as necessary.

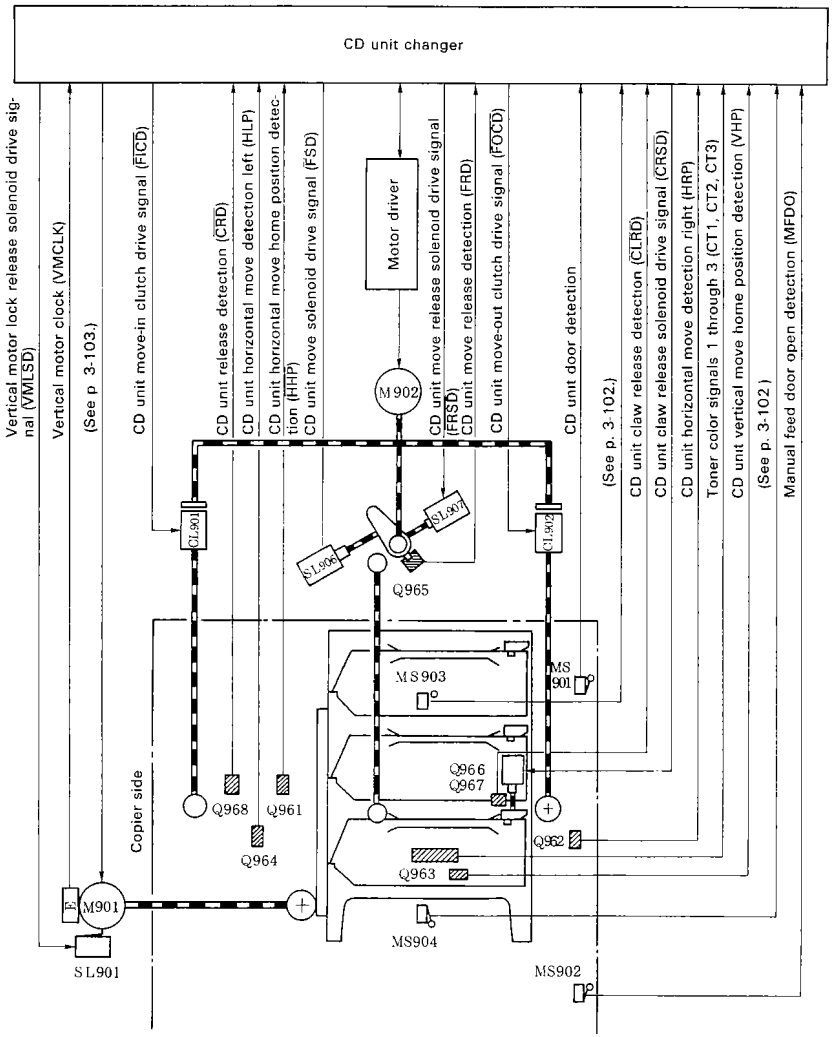

Figure 3-129

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B. Input to and Output from CD Unit Changer Controller

Input to CD Unit Changer Controller

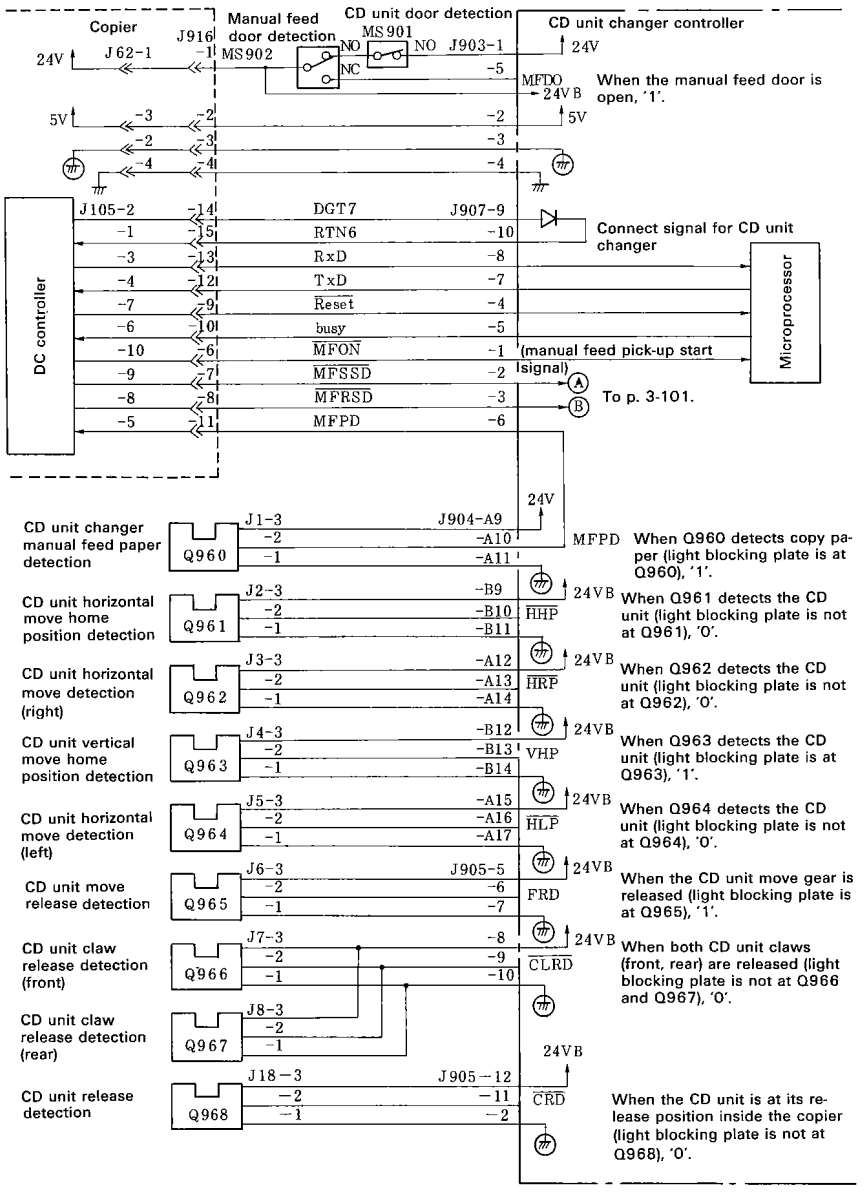

Figure 3-130

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Input to CD Unit Changer Controller (continued)

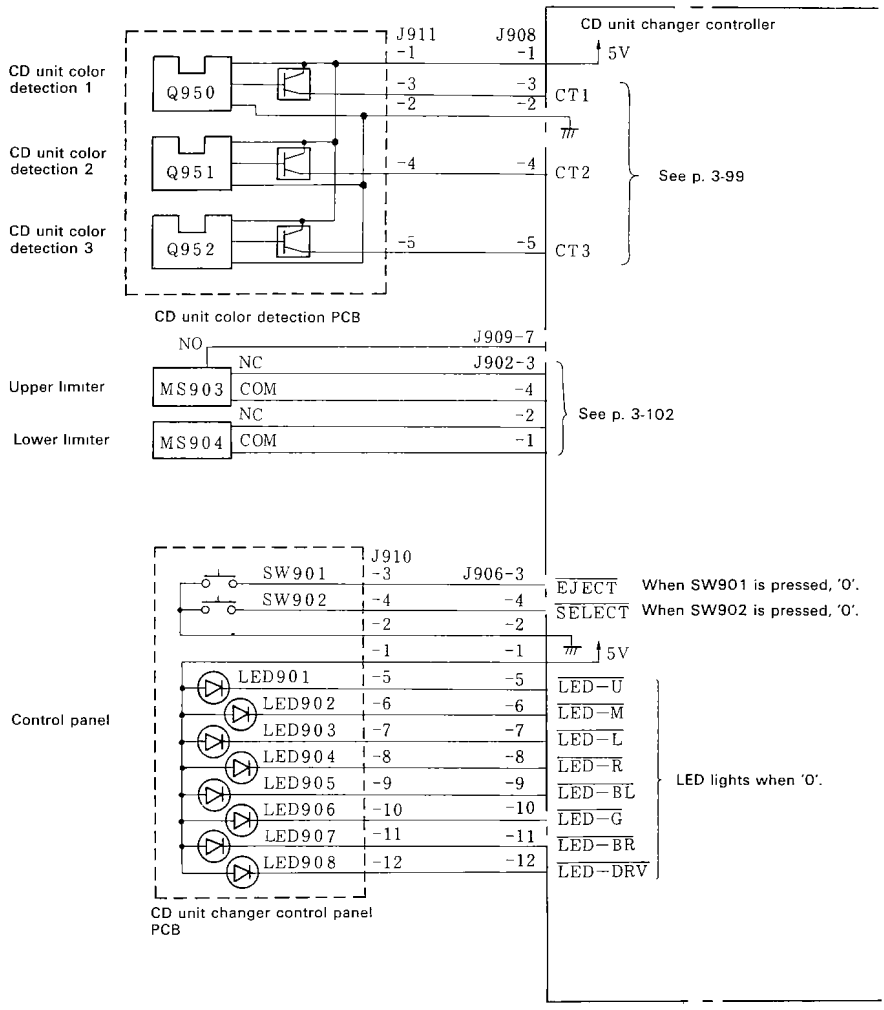

Figure 3-131

Output from CD Unit Changer Controller

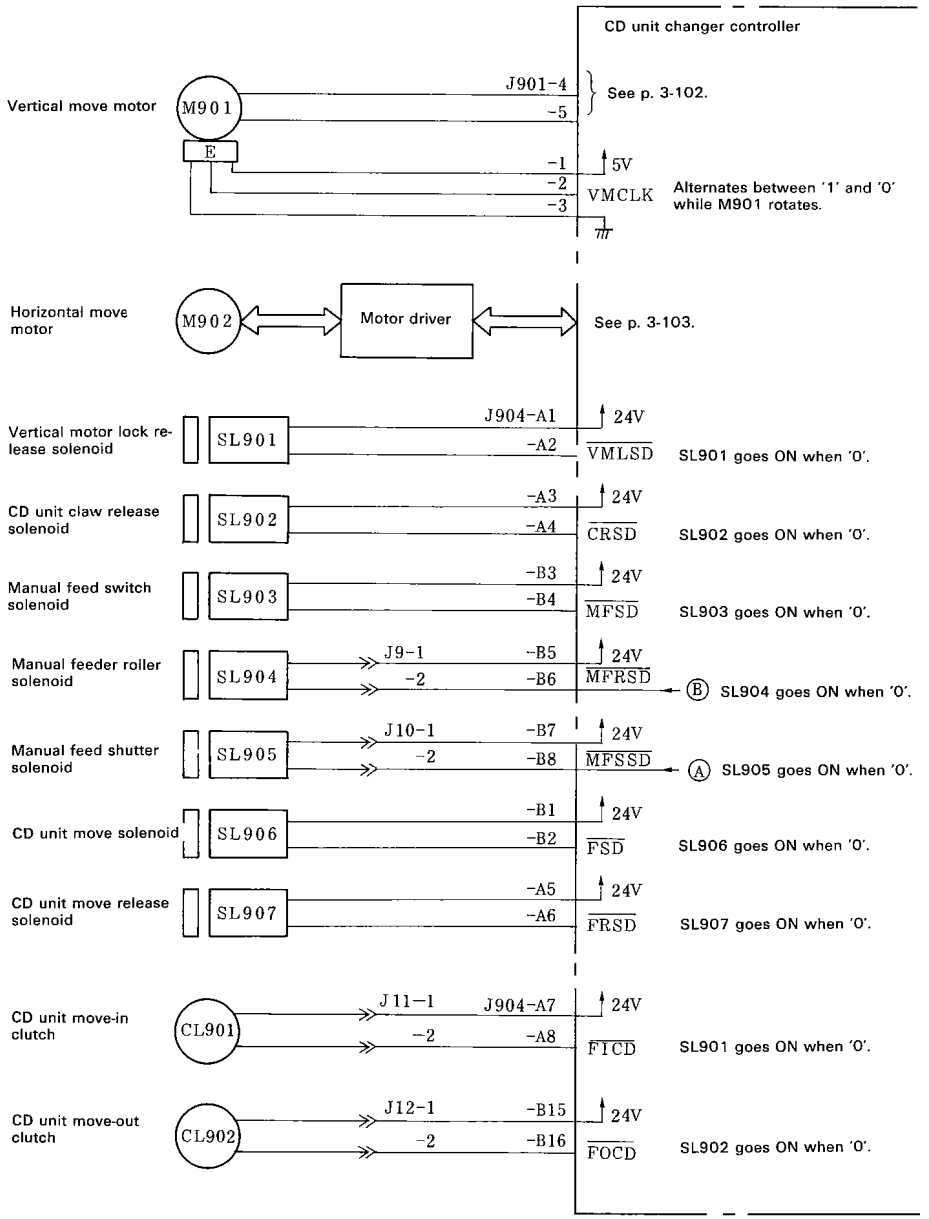

Figure 3-132

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C. Operations at Time of Power ON

When the power is turned ON, the compartment lowers to its bottommost position and then rises to its home position. While lowering itself, it checks the CD unit for the color of its toner.

Jams at the manual feed unit are removed under the compartment; for this reason, the compartment is kept at its topmost position (home position) during copy operation and while in standby.

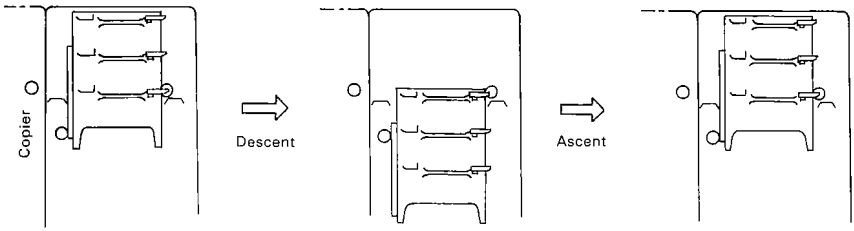
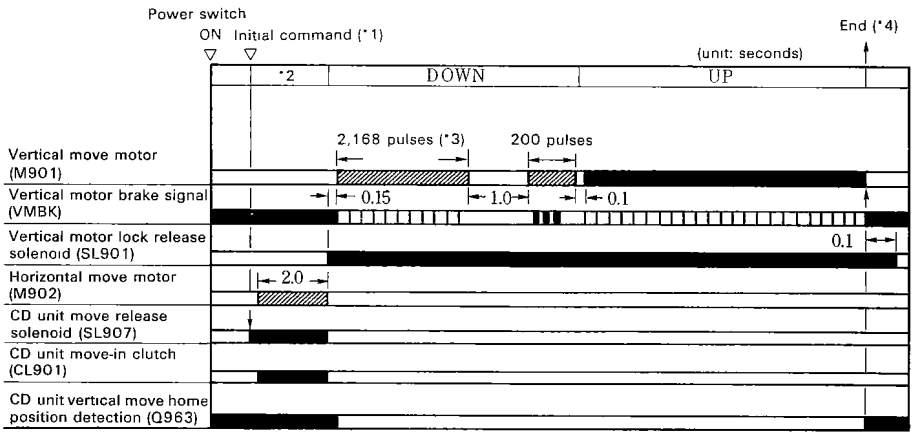


Figure 3-133 At Time of Power ON



*1 Initial operation command sent from copier
*2 Motor rotated into move-in direction, and CD unit detected by sensors even if in between sensors.
*3 Output from vertical move motor encoder
*4 Informs copier of completion of operation

Figure 3-134

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D. Operation at Time of Changing CD Units

The compartment operates as shown in Figures 3-135 to change the CD units inside the compart-ment.

Figures 3-135 and 3-136 show the operation taking place the unit when the CD unit inside the copier is moved to the second shelf of the compartment and that on the third shelf is moved to the copier.

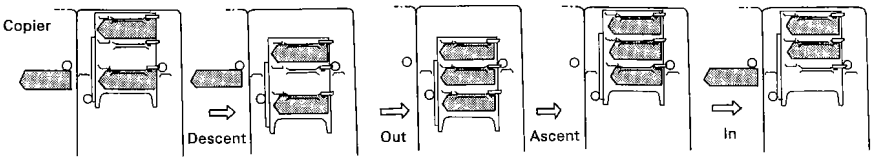
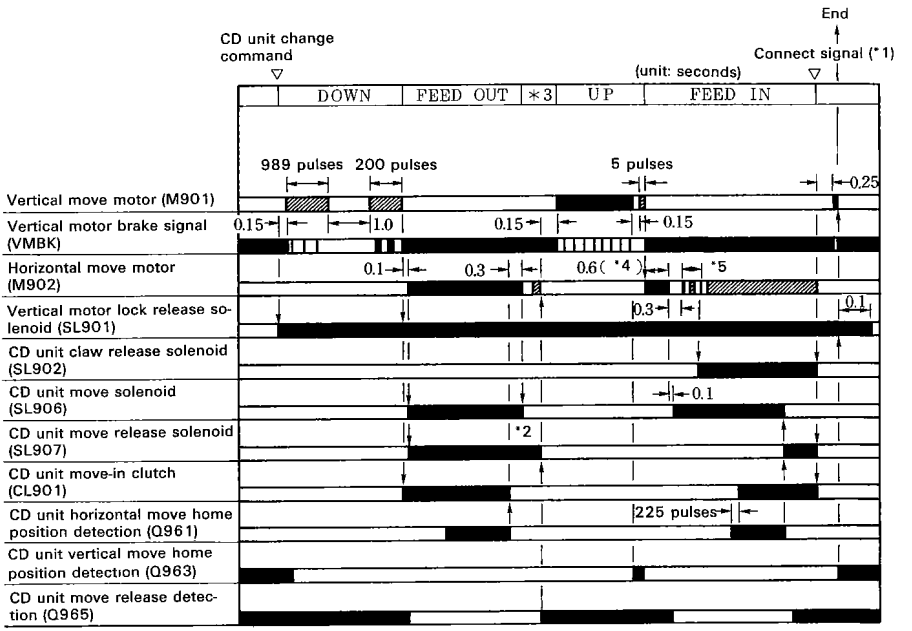


Figure 3-135 CD Units Being Changed



*1 Copier detects connect signal of CD unit.
*2 If claws fail to engage with CD unit, SL906 kept ON to rotate M902 forward and backward until engagement.
*3 Releases move gears.
*4 Removes backlash of gear.
*5 Engages gear with CD unit and, further, releases claws.

Figure 3-136

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E. Operation at Time of Supplying Toner

1. CD Unit Empty of Toner

If the CD unit becomes empty of toner during color copy operation inside the copier, the unit is moved as shown in Figure 3-137 and, thereafter, indicates 'ADD TONER' on the control panel.

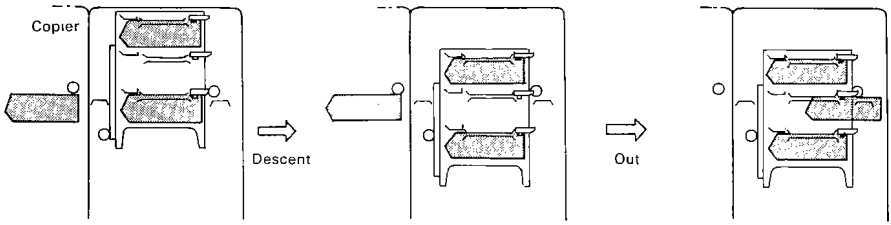
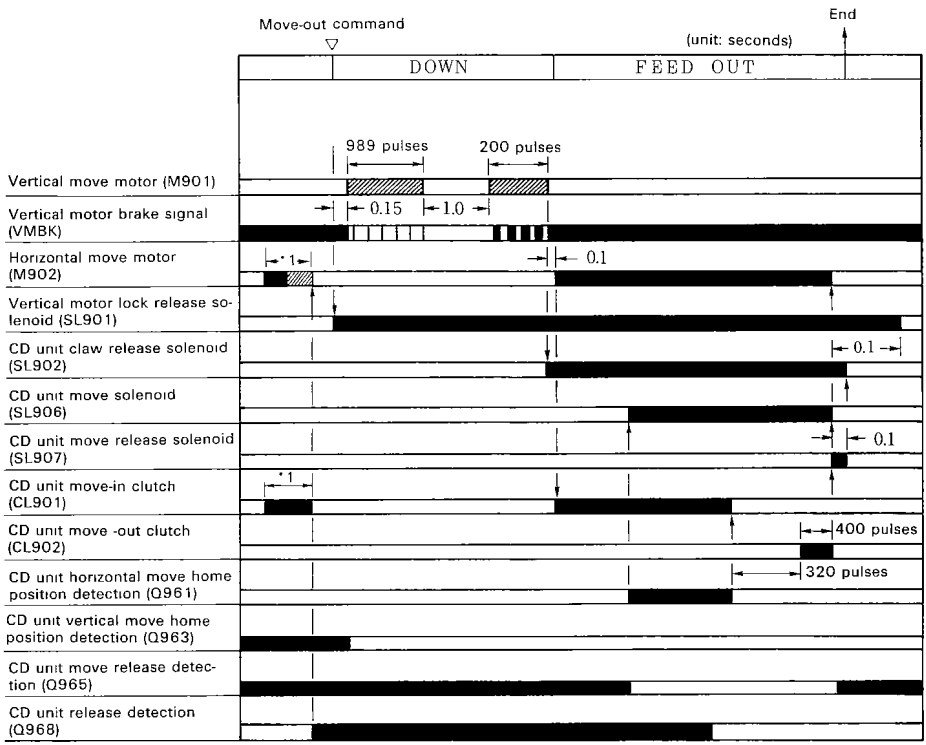


Figure 3-137 Empty CD Unit Being Moved Out



*1 CD unit being released inside copier

Figure 3-138

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2. CD Unit Door Closed

When the CD unit door is closed after toner is supplied, the CD unit changer stores the CD unit inside the compartment and moves the compartment up and down to check the color of the toner inside the CD unit.

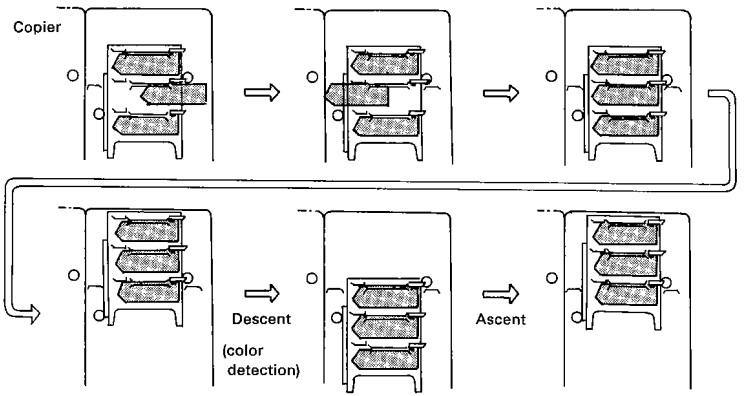
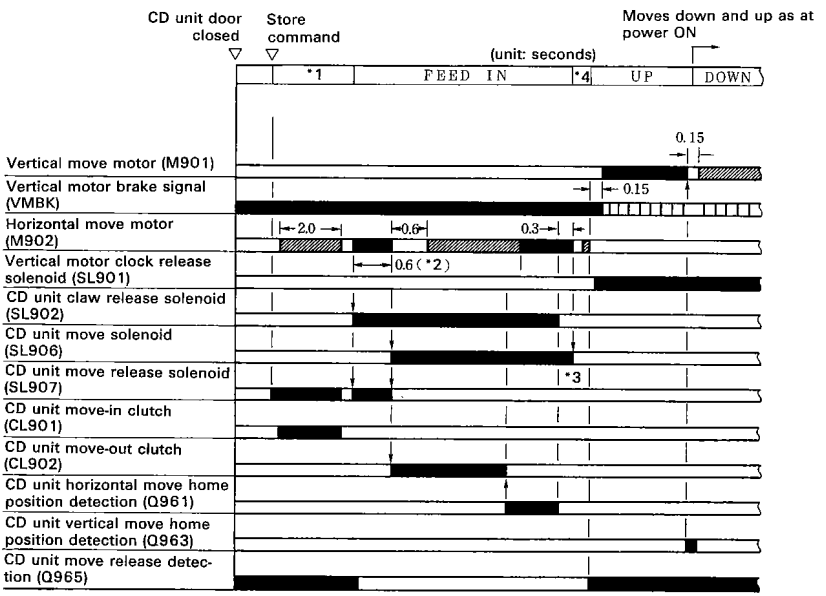


Figure 3-139 CD Unit Door Closed



*1 Motor rotated in move-in direction, and CD unit detected by sensors even if in between sensors.
*2 Remove backlash of gear.
*3 If claws fail to engage with CD unit, SL906 kept ON to rotate M902 forward and backward until engagement.
*4 Engages gear with CD unit and, further, releases claws.

Figure 3-140

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3. START Key ON

When the START key is pressed after toner is supplied and the CD unit door is closed, the CD unit changer operates as shown in Figure 3-141.

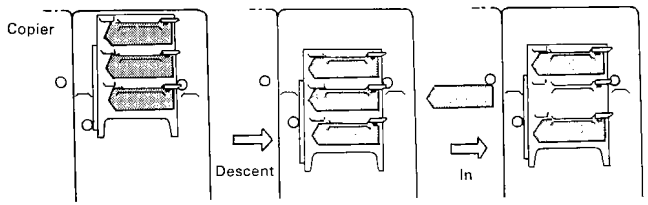
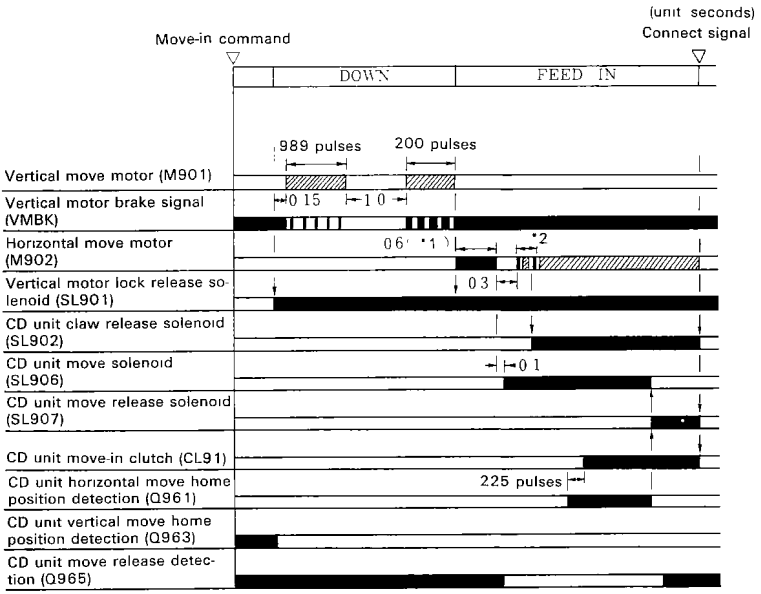


Figure 3-141 COPY START Key ON



*1 Removes backlash of gear.
*2 Engages gear with CD unit, and releases claws.

Figure 3-142

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F. Detection of Color

The CD unit changer identifies the color of the toner inside CD units by detecting the combination of the silver and black labels attached to the front of the CD units.

Signal / Label	Red	Blue	Green	Brown	CD unit absent
CT1	0	1	0	1	1
Label left	Silver	Black	Silver	Black	Absent
CT2	0	0	1	1	1
Label middle	Silver	Silver	Black	Black	Absent
CT3	0	0	0	0	1
Label right	Silver	Silver	Silver	Silver	Absent

Table 3-11

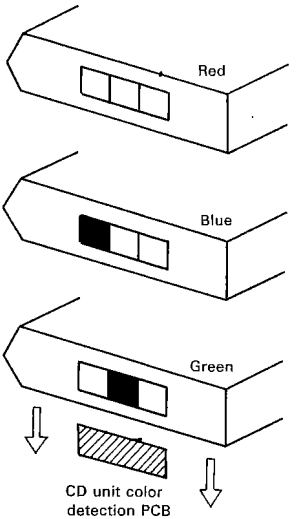

Figure 3-143

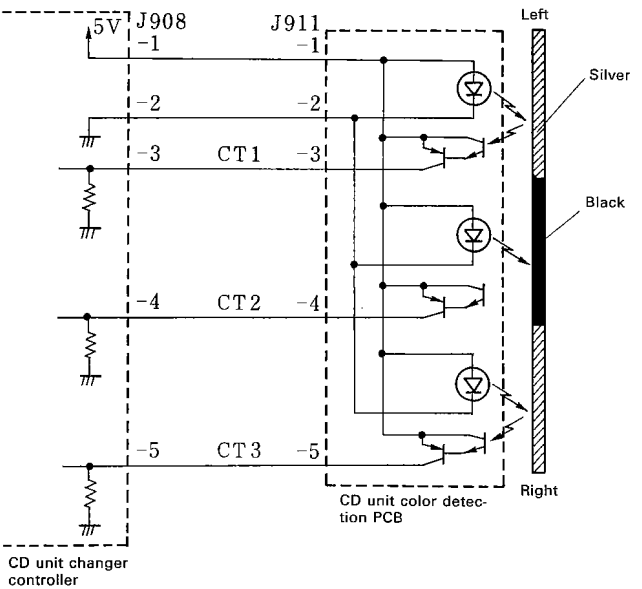

Figure 3-144

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G. Engagement and Disengagement of Move Gear

To move the CD unit in horizontal direction, the move gear is engaged with the CD unit to transmit drive from the horizontal move motor. In moving the compartment in vertical direction, the feeder gear is disengaged to prevent interference between the compartment and move gear.

- When Engaged

The CD unit move solenoid (SL906) goes ON, and the move gear is pushed against the CD unit. The plunger of the CD unit move release solenoid (SL907) is pulled by the work of a spring, and the move gear is locked by a pin.

SL906 goes OFF, and SL907 goes ON. The pin moves out of the locking position, and the move gear in turn is disengaged. At the time, the CD unit move release sensor (Q965) is blocked by the light blocking plate and detects that the move gear is disengaged.

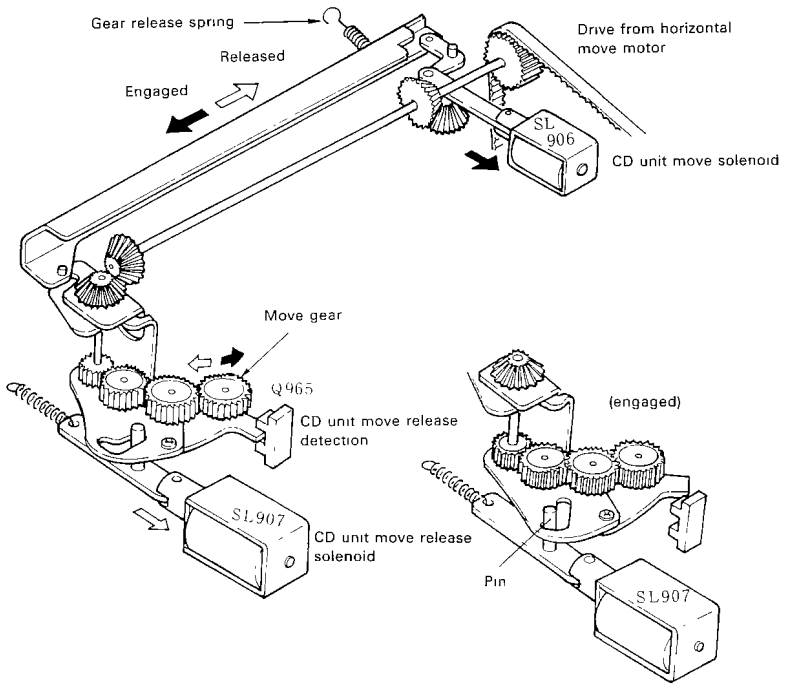

Figure 3-145

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H. Releasing the CD Unit Claw

While inside the compartment, the CD unit is locked by claws located at its front and rear.

When the CD unit moves in horizontal direction, the CD unit claw release solenoid (SL902) goes ON, and the claws are pushed up. At the time, the CD unit claw release sensors (Q966, Q967) become free of the light blocking plate and detects the release of the claws.

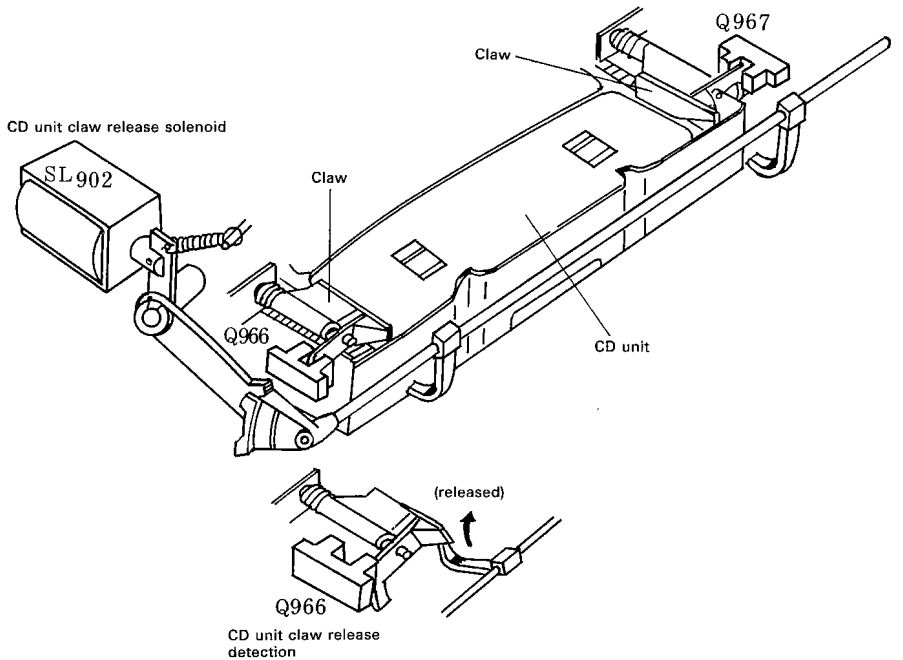

Figure 3-146

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I. Motor Drive Circuit for Vertical Move

The circuit controls the vertical move motor, which moves the compartment up and down.

- Ascent
  VMUP = 1, VMDWN = 0
  └→Transistor A ON
  Transistor B OFF
  └→Transistors D and G ON
  Transistors E and F OFF

The above condition moves the current into the direction of ➡ (Figure 3-147), and the motor rotates for ascent direction.

- Descent
  VMUP = 0, VMDWN = 1
  └→Transistor A OFF
  Transistor B ON
  └→Transistor D and G OFF
  Transistor E and F ON

The above condition moves the current into the direction of ⇨ (Figure 3-147), and the motor rotates for descent direction.

- Braking
  VMBK = 1
  └→Transistor C ON
  └→Transistor D and F ON
  Transistor E and G OFF

The above condition causes both terminals of the motor to short-circuit and to apply the brake.

If an over-current flows into the circuit for some reason (short circuit, etc.), the over-current protection circuit goes ON; this cause transistors D and F to go ON and transistors E and G to go OFF regardless of the state of VMUP or VMDWN.

The CD unit changer controller generates 'E081' if the vertical motor clock (VMCLK) remains '1' or '0' for more than a specified period of time.

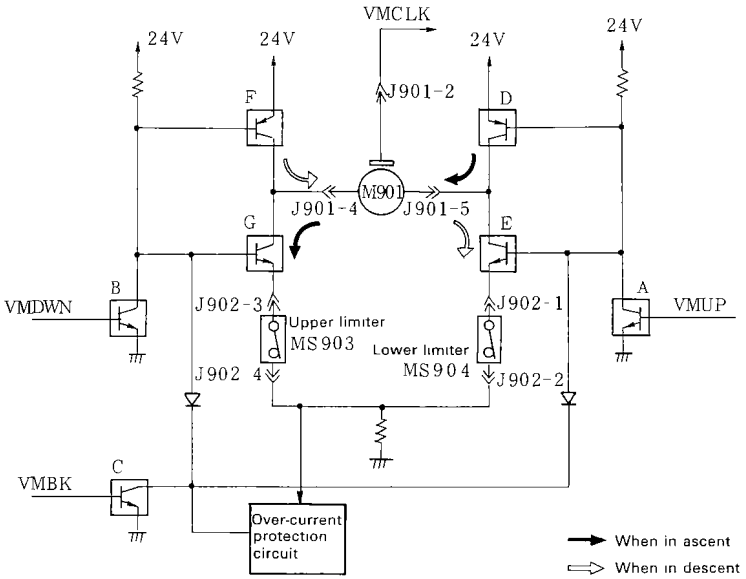

Figure 3-147

J. Motor Drive Circuit for Horizontal Move

Figure 3-148 shows the circuit used to control the horizontal move motor (M902), which moves the CD unit in horizontal direction. It turns the motor ON and OFF as well as controls the direction of its rotation.

- Horizontal motor drive signal ($\overline{HMD}$)
- Horizontal motor move out signal ($\overline{HMFO}$)

The motor is a 3-phase motor and, when $\overline{HMD}$ = 0, the control circuit turns pulse signals U, V and W ON in sequence, based on the clock pulses from the hall IC to rotate the motor.

The control circuit controls the sequence by which the pulse signals are turned ON according to the '1' and '0' states of $\overline{HMFO}$, thereby determining the direction of motor rotation.

The CD unit changer controller generates 'E082' on the control panel if the horizontal motor clock (HMCLK) remains '1' or '0' for more than a specified period of time.

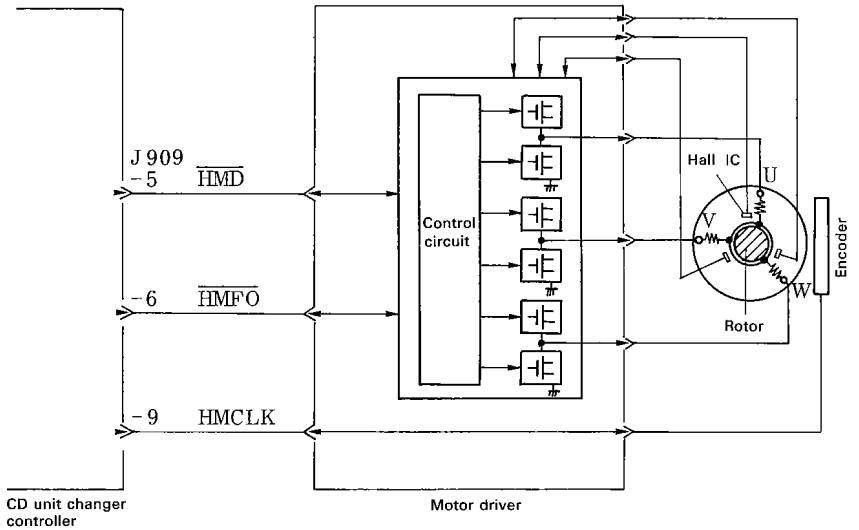

Figure 3-148

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VIII. PAPER DECK VIII

A. Electrical Circuit

The major electrical operations of the paper deck is controlled by signals from the copier and the controller inside the paper deck.

The signals from the copier are pre-programmed and sent to the controller inside the deck as necessary.

The controller inside the deck sends signals to drive the motors and clutches in response to the signals from the copier and those from the microswitches and sensors.

Figure 3-149 is a block diagram showing the relationship among major circuits of the deck.

The 24V DC supplied from the copier is distributed to each load of the paper deck.

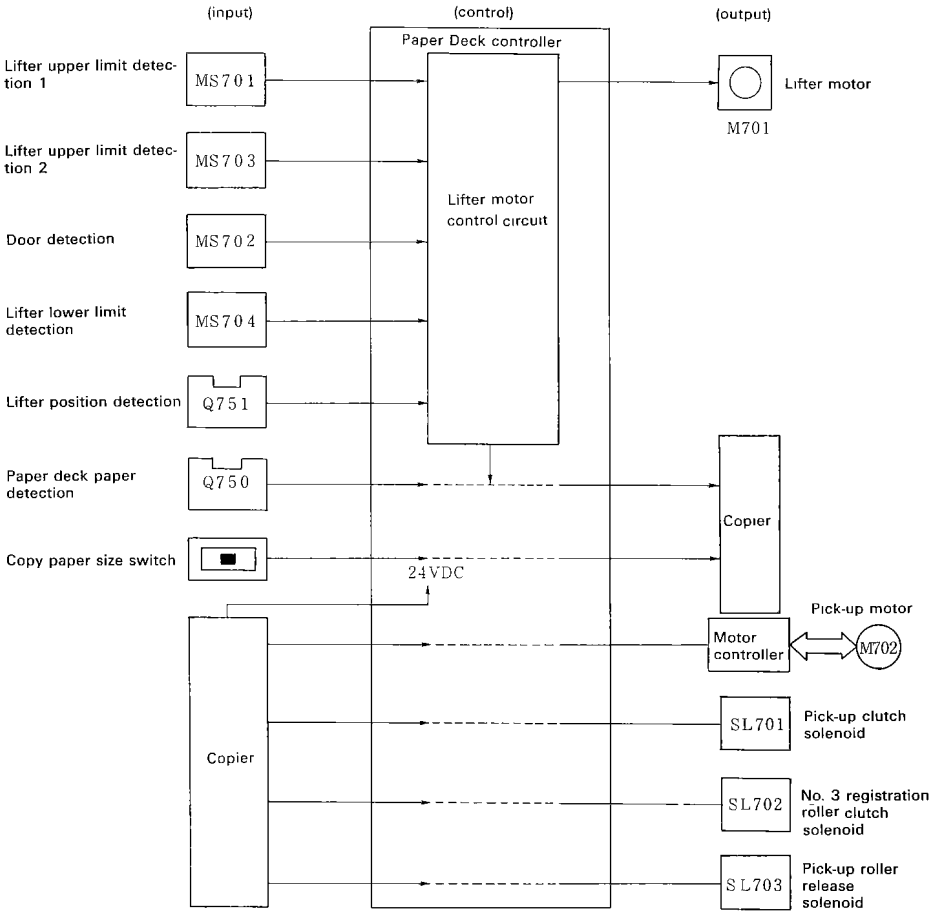

Figure 3-149

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B. Input to and Output from Paper Deck Controller

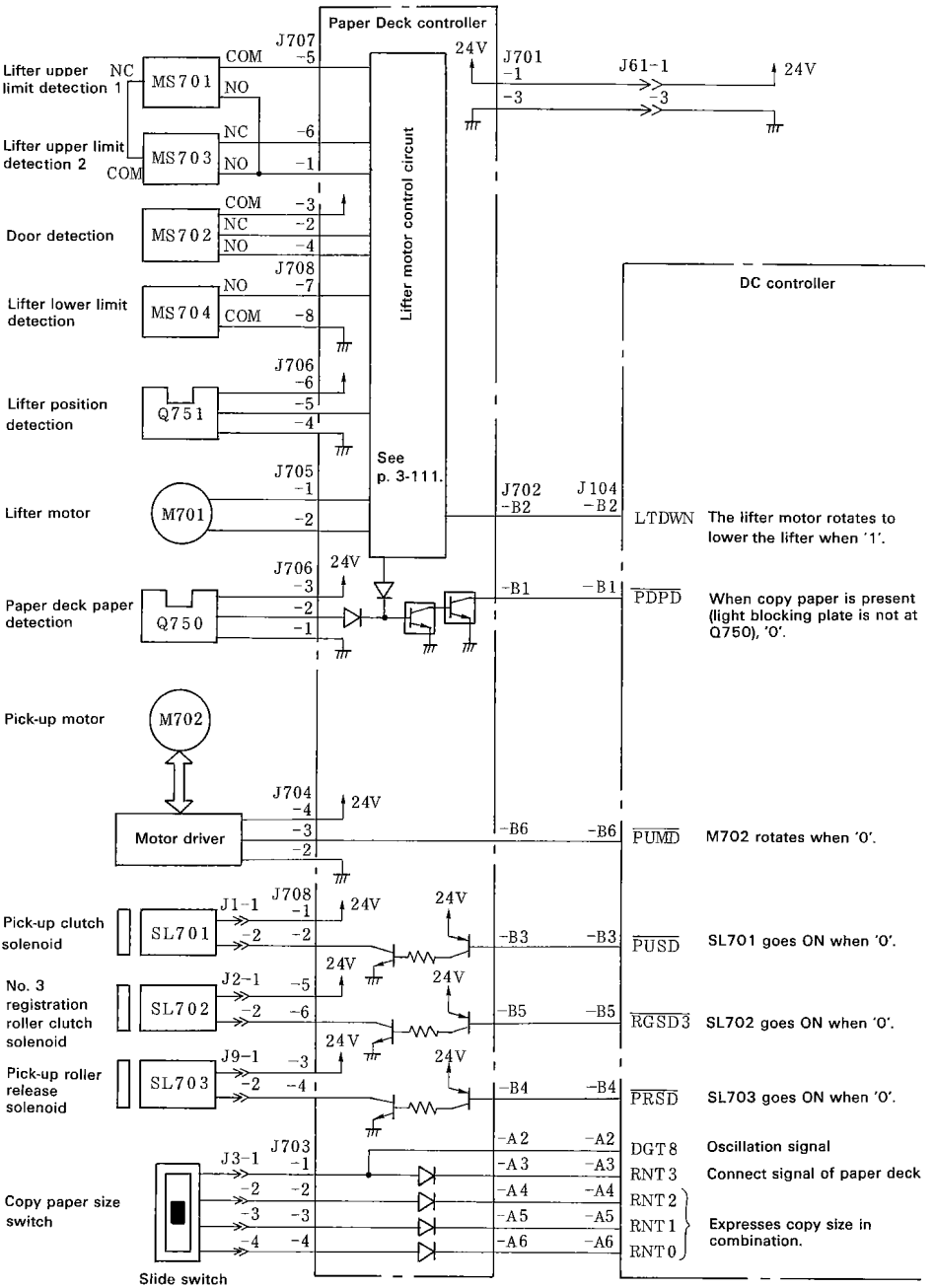

Figure 3-150

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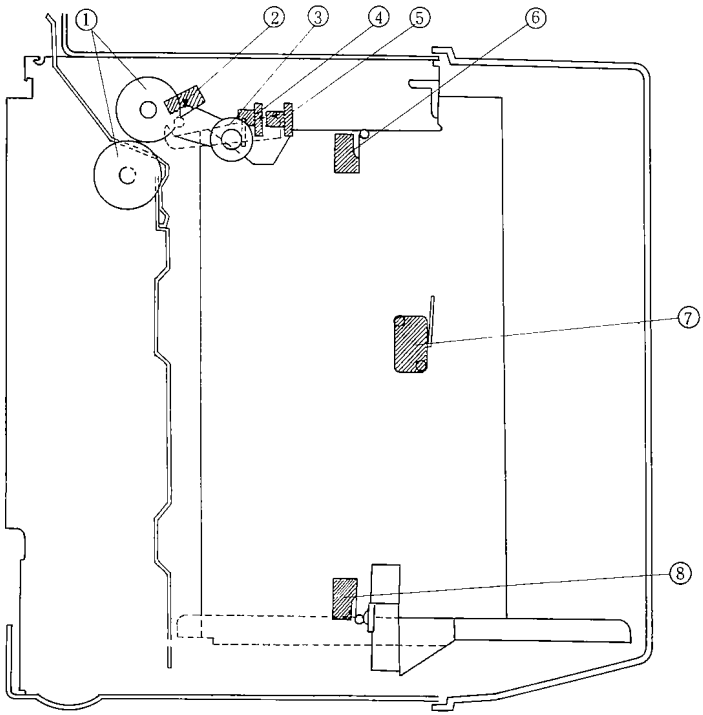
C. Arrangement of Sensor Rollers



① Separation and feeder rollers
② Lifter upper limit detection switch 1
③ Pick-up roller
④ Lifter position detection sensor
⑤ Paper detection sensor
⑥ Lifter upper limit detection switch 2
⑦ Door detection switch
⑧ Lifter lower limit detection switch

Figure 3-151 Arrangement of Roller Sensors in Paper Deck

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D. Outline

The lifter is moved up and down by the lifter motor.

The lifter motor is a DC motor and is controlled by the paper deck controller, switches, sensors, and solenoids.

The pick-up motor is a DC motor and is controlled by signals from the copier coming through the paper deck controller. The pick-up motor drives the pick-up roller and No. 3 registration roller.

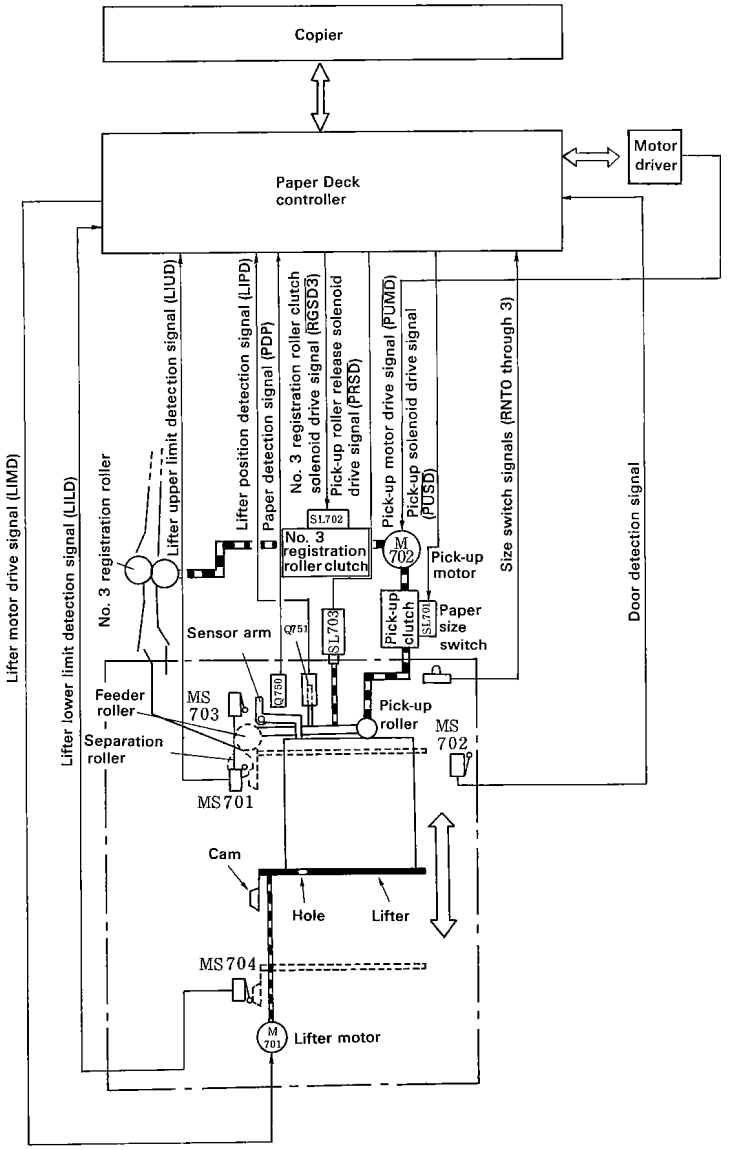

Figure 3-152

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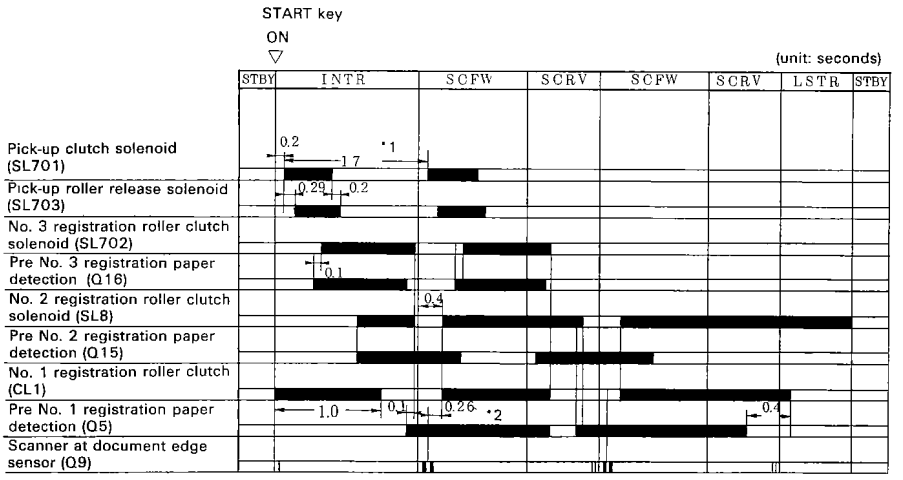
E. Sequence for Pick-Up Operation



*1 Varies depending on paper size

$$\frac{\text{Paper length (220mm min.)} \times 4/3}{224 \text{ mm/s}^{*}} + 400 \text{ ms}^{**}$$

* Feed speed of paper.
** Warm-up time for scanner

*2 Variable by service mode (RGSD)

Figure 3-153

The copy paper picked up from the paper deck is sent to the transfer corona unit through the No. 3, No. 2, and No. 1 registration rollers.

The paper is made to form a loop at the No. 3 and No. 1 registration rollers so as to prevent it from moving a skew.

The No. 2 registration roller keeps rotating except when the No. 1 registration roller is making a loop of copy paper.

For copy operation on an A4/Letter single copy using a document feeder, the paper deck always performs a pre pick-up*. For this reason, copy paper is left inside the copier at the No. 3 registration when the copy operation is finished for the last document. The paper is fed at the beginning of the next copy operation.

*The copier has a long paper path between the paper deck and No. 1 registration roller. If the copier was designed to start the pick-up operation after confirming the signal from the document feeder (document present), the copy paper would not be moved to the No. 1 registration roller while the scanner is moved forward. For this reason, the copier picks up a sheet of paper before it is informed of the last document by the document feeder.

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F. Lifter Operations

1. Ascent of Lifter

(1) The lifter moves up when all the following conditions are met:
   a. Power from the copier is available.
   b. The paper cover is closed (MS702 is ON).
   c. The lifter position detection signal is '0' (sensor arm is not at Q751).
   d. The upper limit level detection signals (MS701, MS703) are OFF.
   e. The lifter ready signal from the copier is '0'.

(2) The sensor arm moves away from the lifter position sensor (Q751) when copy paper is fed about 2 mm (about 20 sheets of 60 g/m² paper).
   The condition causes the position detection signal to go '0', thereby raising the lifter about 2 mm.

2. Suspension of Ascent and Suspension of Abnormal Ascent of Lifter

When the lifter is moved up and the paper pushes up the sensor arm, the sensor arm in turn blocks the lifter position sensor (Q751).

This condition causes the position detection signal to go '1' and stops the lifter.

Should the lifter keep moving up even after the sensor arm blocks the position sensor, the sensor arm presses the microswitch (MS703) to stop the lifter.

If the lifter moves up in the absence of paper, on the other hand, the cam fitted on the lifter presses the microswitch (MS701) to stop the lifter.

3. Descent of Lifter

The lifter moves down when all the following conditions are met:
a. Power from the copier is available.
b. The paper cover is open (MS702 is OFF) or the lifter drive lower signal (LTDWN) is '1'.
c. The lower level detection signals (MS704) are OFF.

The lifter lowers and, when the cam fitted on the lifter presses the microswitch (MS704), stops.

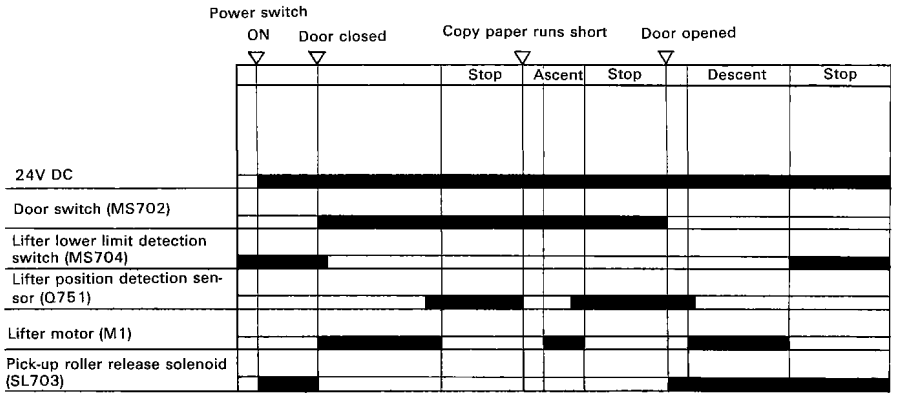

Figure 154 Sequence for Lifter Movement

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G. Control Circuit for Lifter Motor

The control circuit illustrated in Figure 3-155 operates as follows:

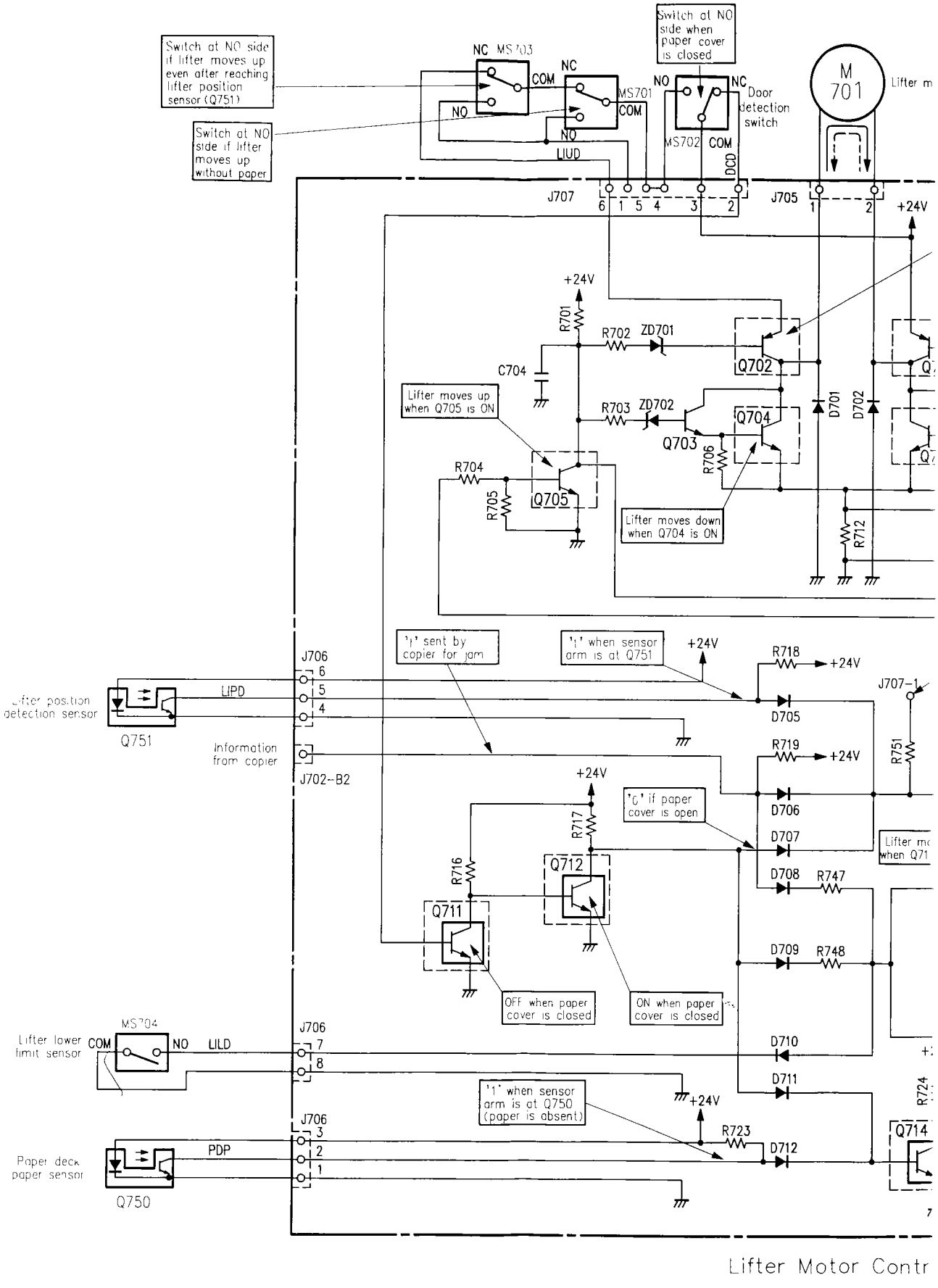

Figure 3-15

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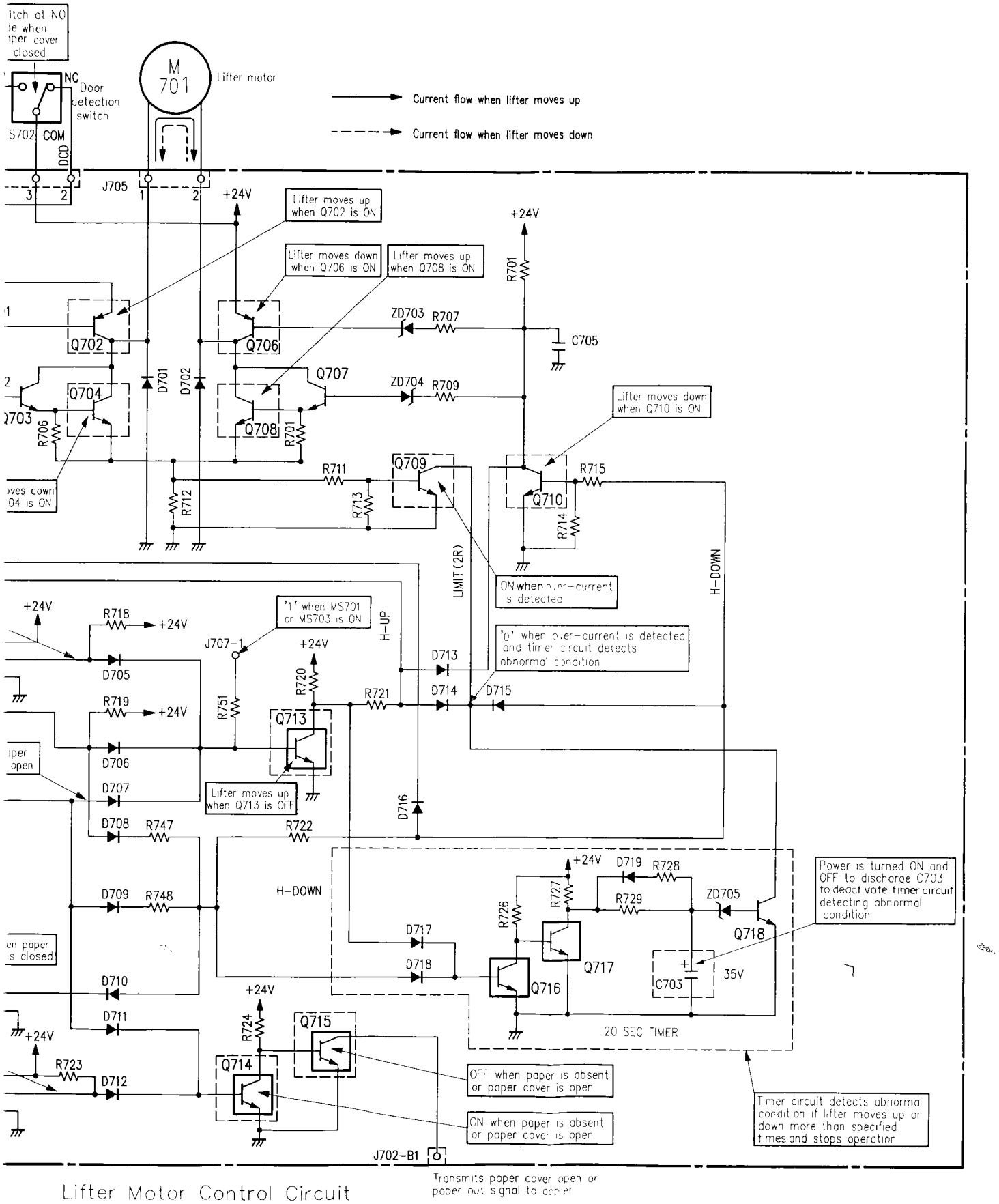

Lifter Motor Control Circuit

Figure 3-155

- When the lifter motor is rotating for ascent,
  - Lifter position detection signal (J706-5) ..... '0'
  - Jam information from copier (J702-B2) ..... '0'
  - Door detection switch (J707-2) ..... '0'
  - Lifter upper limit detection switch (J707-1) ..... '0'

→Q713 OFF
→Q705 ON
→Q702 ON
→Q703 OFF
→Q704 OFF

→Q710 OFF
→Q706 OFF
→Q707 ON
→Q708 ON

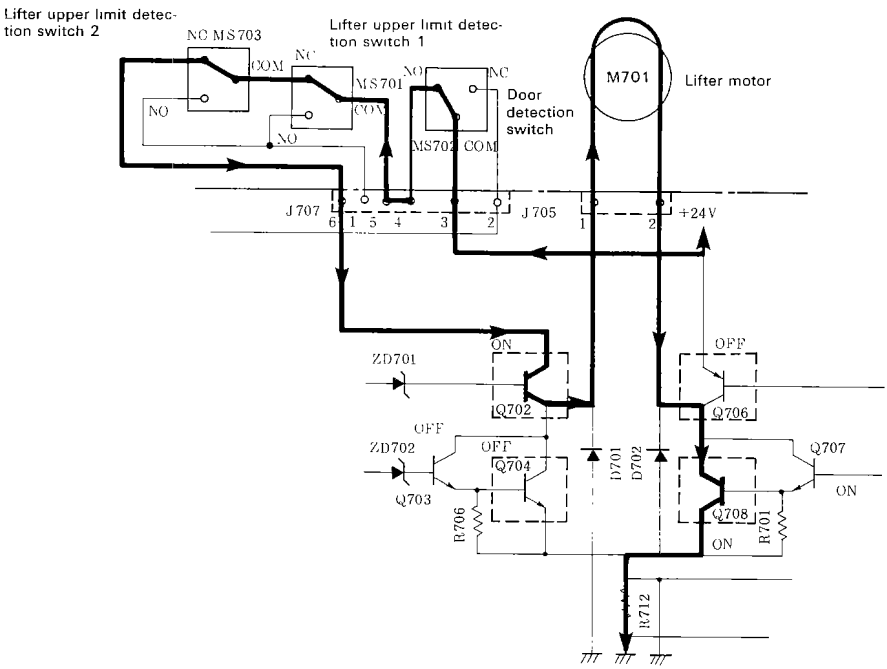

Figure 3-156 Current Flow When Lifter Motor Rotates for Ascent

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- When the lifter motor rotates for descent
  If either of the following is '1'
  - Jam signal from copier (J702-B2)
  - Door detection switch (J707-2)

→Q713 ON
→Q705 OFF
→Q702 OFF
→Q703 ON
→Q704 ON

→Q710 ON
→Q706 ON
→Q707 OFF
→Q708 OFF

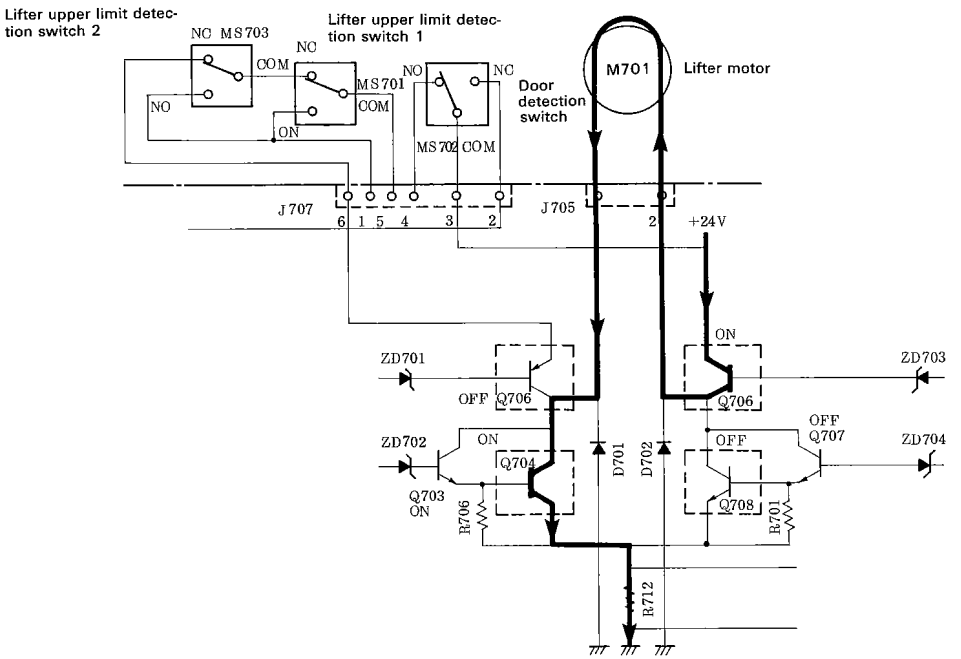

Figure 3-157 Current Flow When Lifter Motor Rotates for Descent

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- When stopping or braking the lifter motor,
  Either of the following is '1'
  - Lifter motor position detection signal (J706-5)
  - Lifter upper limit detection switches 1 and 2 (J707-1)

Q709 goes ON under the following conditions and forces the lifter motor to stop.
- If over-current is detected; and
- If the timer circuit detects ascent or descent rotation of the lifter motor over the specified period of time.

ON/OFF of transistor				Lifter motor (M701) rotation
Q702	Q704	Q706	Q708	
ON	OFF	OFF	ON	Lifter motor ascent
OFF	ON	ON	OFF	Lifter motor descent
OFF	ON	OFF	ON	Lifter motor stop/brake

Table 3-11

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IX. SERVICE MODE

A. Outline

The service modes of the copier are classified into the following six:

Item	Indication	Mode
* 1 *	DISPLAY	Control display
* 2 *	I/O DISPLAY	I/O Display
* 3 *	ADJUST	Adjustment
* 4 *	FUNCTION	Function/Check
* 5 *	USER OPTION	User option
* 6 *	COUNTER	Counter

Table 3-12

B. Operations in Service Mode

1) Open the front door, and insert the door switch actuator into the door switch. To make checks in "I/O DISPLAY', set the copy mode.
2) Push the service mode switch (SW501) with a hex key or the like.

- The copier enters the service mode and indicates 'S' at the upper left of the message display.

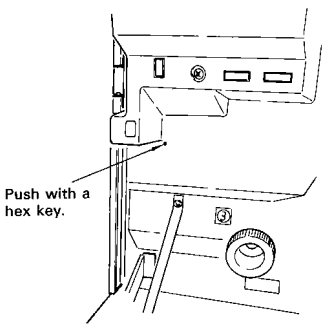

Figure 3-158

3) Enter the No. of the mode desired for adjustment (see Table 3-12) with the * key and input keys.

EX.) ✱ → 3 → ✱

- The copier shows the service mode screen.

4) Press the ↑ or ↓ key to select the screen.
5) Make checks or adjustments.
6) Press the reset key to clear the service mode screen.
7) Press the reset key once again to leave the service mode.

Note:
The speed of copy operation while the service mode screen is shown is lower than the normal copy speed.

C. Adjustment Mode and User Option Mode

With the adjustment mode and user option mode, the settings made on the control panel can be stored in the RAM of the DC controller PCB; in this respect, these modes serve the same purpose as the conventional VRs and SWs.

Figure 3-159 shows the label attached behind the front door of the copier.

Each copier is adjusted at the factory and adjustments values are recorded on the label.

The DC controller PCBs available as service parts are programed with standard values; reset them to the values on the label when they are replaced or RAM is cleared. Likewise, record any values entered in the field on the label.

	TYP
LIGHT	
AE	
RGST	
LEBA	
SBA	
SCBK	10
CHRTR	3
SCREN	6
GRI-N	
GRI-P	
DCB-B	
DCB-C	
TRN-1	
TRN-2	
SEP-1	
SEP-2	
BK-ER	
AD-P	
AD-A	
L-PWR	

(NP-4835/4835i)

TYP		TYP	
LIGHT		DCB-B	-200
AE		TRN-1	
RGST		TRN-2	
LEBA		SEP-1	
SCBK	10	SEP-2	
GRI-N	-620		
GRI-P	-400		

(NP-4835S/4335)

Figure 3-159

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D. Control Display Mode (* 1 *)

Press the ↑ or ↓ key to select the screen.

* 1 * DISPLAY					
TEMP	:	185°C	LAMP1	:	065.0V
AE	:	128	LAMP2	:	140.0V
ED_X	:	120mm	ED_Y	:	330mm

Figure 3-160 DISPLAY 1

Item	Description	Remarks
TEMP	Surface temperature of fixing assembly upper roller (output of thermistor)	(in °C)
AE	Document density (output of AE sensor)	0 ~ 255
LAMP1 LAMP2	ON voltage for scanning lamp LAMP 1: if 100V/115V LAMP 2: if 220V/240V	(in V)
ED_X ED_Y	Editor input coordinates ED_X: X direction ED_Y: Y direction	(NP-4835/4835i only) (in mm)

Table 3-13

* 1 * DISPLAY						
		BODY		DF		SORT
JAM	:	0000	/	00	/	00
ERR	:	0000	/	00	/	00
ALRM	:	00	/	00	/	00
						00

Figure 3-161 DISPALY 2

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Item	Description	Remarks
JAM	Location of Jam BODY: Copier (See Table 3-15.) DF: RDF-II, D-ADF (See Table 3-16.) SORT: Sorter VIII, Staple Sorter (See Table 3-17.)	Flashing. (See Note.)
ERR	Self-Diagnosis (errors; particulars) (See Tables 3-18 and 3-19; for error indication on the copier, see p. 3-147.)	Flashing. (See Note.)
ALARM	Warning (See Tables 3-20, -21, -22, and -23.) EX. 'SET DOCUMENT'.	Flashing. (See Note.)

Note:
When the copier is reset by turning its power switch OFF and ON, the indication is for the foregoing particulars.

Table 3-14

Code	Type of jam	Code	Type of jam
0000	Door open during copy operation*	0100	Delay jam at lower feeder unit inlet (Q3)
0001	Delay jam at pre No. 3 registration (Q16)	0200	Timing/stationary jam at lower feeder unit inlet (Q3)
0002	Timing/stationary jam at pre No. 3 registration (Q16)	0400	Delay jam at lower feeder unit outlet (Q14)
0004	Delay jam at pre No. 2 registration (Q15)	0800	Timing/stationary jam at lower feeder unit outlet (Q14)
0008	Timing/stationary jam at pre No. 2 registration (Q15)	1000	Delay jam at pre No. 4 registration (Q854)
0010	Delay jam at pre No. 1 registration (Q5)	2000	Timing/stationary jam at pre No. 4 registration (Q854)
0020	Timing/stationary jam at pre No. 1 registraion (Q5)	4000	Delay jam manual feed (Q4)
0040	Delay jam at delivery (Q2)	8000	Timing/stationary jam at manual feed (Q49)
0080	Timing/stationary jam at delivery (Q2)	FFFF	Paper at sensor at power-on

* For dtails, see Table 3-20.

Table 3-15 Jam in Copier (BODY)

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Code	Type of jam
01	Document pulled out during pick-up
02	Delay jam at pick-up sensor
03	Delay jam at registration/skew sensor
04	Leading edge skew jam at registration/skew sensor
05	Stationary jam at registration/skew sensor
06	Double-feeding at registration/skew sensor
07	Trailing edge skew at registration/skew sensor
09	Bending of paper tip at registration/skew sensor
11	Delay jam 1 at invert sensor
12	Stationary jam at invert sensor
13	Delay jam 2 at invert sensor
20	Initial stationary jam at invert sensor
21	In inversion, delay jam at registration/skew sensor
22	In inversion, leading edge skew jam at registration/skew sensor
23	In inversion stationary jam at registration/skew sensor
24	In inversion, trailing edge skew jam at registration/skew sensor
26	Bending of paper tip at registration/skew sensor at time of reversal/pick-up
41	Delay jam at delivery sensor
42	Stationary jam at delivery sensor
81	Open detection
82	Pick-up tray or upper cover open detection
83	Delivery document non-detection at document sensor
84	Document detected by sensor at pick-up

Table 3-16 Jams in DF

Code	Type of jam
01	Delay jam at paper fold sensor
02	Stationary jam at paper fold sensor
03	Delay jam at paper sensor
04	Stationary jam at paper sensor
05	Timing jam at paper sensor
06	Staple jam
07	Paper detected at power-on
08	Joint switch or cover switch is OFF during copy operation

Table 3-17 Jams in Sorter

Code	Description
01	E401 ON signal
02	E402 ON signal
03	E403 ON signal
04	E404 ON signal
11	E411 ON signal

Table 3-18 Error in DF

Code	Description
10	E510 ON signal
11	E511 ON signal
12	E512 ON signal
14	E514 ON signal
20	E520 ON signal
30	E530 ON signal
31	E531 ON signal
35	E535 ON signal
40	E540 ON signal
41	E541 ON signal
50	E550 ON signal

Table 3-19 Error in Sorter

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Code	Description
* 01	CD unit door open
02	Right door open
03	Lower right door open
* 04	CD unit changer CD unit door open
* 05	CD unit changer manual feed door open
10	Cross-way registration error
* 21	Editor plane-shaped resistor open
* 22	Editor plane-shaped resistor short
* 23	Editor/DF communication failure
30	Cleaning web out
40	Waste toner full
50	IC card unit power supply problem or IC card shutter problem

*NP-4835/4835i only.

Table 3-20 Copier Alarm

Code	Description
01	Recycle lever idle movement
02	Document edge sensor detection failure
03	Separation failure at document pick-up
04	Skew at document pick-up
05	Document overriding paper stopper at pick-up
11	Change in number of documents after jam removal
12	Number of documents excessive

Table 3-21 DF Alarm

The errors above are communicated to the copier when the DF detects poorly set documents.

Error	Description
01	Paper hold unit power OFF.
02	Over-stacking

Table 3-22 Sorter Tray Alarm

Error	Description
01	Staple down
02	Staple jam
05	Staple over-stacking
06	Staple full
07	Mixed paper sizes (cross-way)
08	Staple unit out
09	Stapled sheets in bin
0A	No staple

Table 3-23 Sorter Stapler Alarm

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＊1＊ DISPLAY			
MST1 :	·	DF :	·
MST2 :	·	SORT :	·
SUB :	·	ACC :	·
MSSG :	·	LANG :	

Figure 3-162 DISPLAY 3

Item	Description	Remarks
	Shows version and language of each ROM	
MST1	MST1: Q110 (sequence)	
MST2	MST2: Q111 (sequence/message)	
SUB	SUB: Q102	
MSSG	MSSG: Version of message	
DF	DF: ROM of RDF-II or D-ADF	
SORT	SORT: ROM of Sorter VIII or Staple Sorter	
* ACC	ACC: ROM (Q905) of CD unit changer	
LANG	LANG: Language	

* NP-4835/4835i only.

Table 3-24

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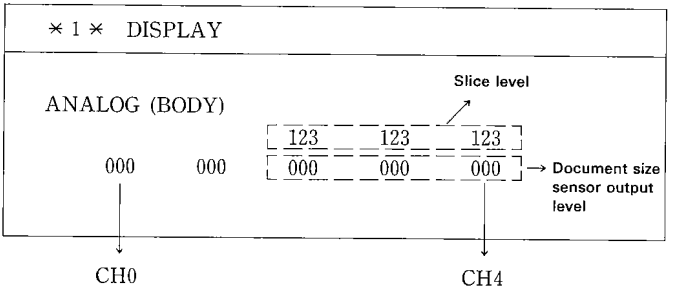

Figure 3-163 DISPLAY 4

Input Level of Analog Signal to Microprocessor

Note: Pin Nos. in ( ) are for NP-4835S/4335

Item	CH	Description	Signal	Pin	Remarks
ANALOG (BODY) Copier	0	AE sensor output level	AE	J112-A8 (B9)	000: 0V
	1	Thermistor output level	FRST	J109-B19	255: 5V
	2	Document size sensor output level	SIZE0	J112-B5	
	3	Document sensor output level	SIZE1	J112-B3	
	4	Docment size sensor output level	SIZE2	J112-B1	
ANALOG (DF) RDF-II in use	0	S10 (document edge detection) level	DEP	J11-12	000: 0V
	1	S8(skew sensor) level	PDP4	J3-6	255: 5V
	2	S7 (registration sensor) level	PDP3	J3-4	
	3	S9 (invert sensor) level	PDP5	J12-1	
	4	S6 (document detection) level	DEP1	J3-8	
ANALOG (DF) D-ADF in use	0	SW5-5 and SW1-6 setting	–	–	000: 0V
	1	JP1 and JP2 connection	–	–	255: 5V
	2	Not used.	–	–	
	3	S7 (registration sensor) level	PDP3	J9-4	
	4	S6 (document detection) level	DOEP	J11-5	

Table 3-25

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E. I/O Display Mode (* 2 *)

Press the ↑ or ↓ key to select the screen.

- In this mode, each bit of each port may be checked for input and output; each address is as referenced below.
  PA0 to PC5: Main CPU ports
  SPA to SPF: Sub CPU ports
  MT6 to MTF: Indicate state of switches wired in matrix (static)
  DF0 to DF4: CPU ports on DF controller PCB
  ST0 to ST4: CPU ports on sorter controller PCB
  *AC0 to AC4:CPU ports on CD unit changer controller PCB
  * NP-4835 only.

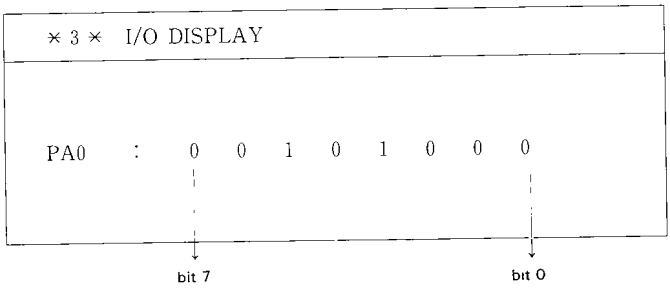

Figure 3-164

(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PA0	0	Manual feed paper detection (Q4) signal	$\overline{\text{MFPD}}$	J103-A9	0: Paper present.
	1	Pre No.3 registration paper detection (Q16) signal	PDP7	J103-B13	1: Paper present.
	2	Pre No.4 registration paper detection (Q854) signal	$\overline{\text{PDP8}}$	J104-A7	0: Paper present.
	3	Pre No.2 registration paper detection (Q854) signal	$\overline{\text{PDP6}}$	J103-B1	0: Paper present.
	4	Pre No.1 registration paper detection (Q5) signal	PDP1	J102-B14	1: Paper present.
	5	Delivery detection (Q2) signal	$\overline{\text{PDP3}}$	J109-B8	0: Paper present.

Table 3-26A

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PA0	6	Lower feeder unit inlet paper detection (Q3) signal	$\overline{PDP4}$	J109-B11	0: Paper present.
	7	Lower feeder unit outlet paper detection (Q14) signal	$\overline{PDP5}$	J103-B2	0: Paper present.
PB0	0	Manual feed shutter solenoid (SL9) drive signal	$\overline{MFSSD}$	J103-A6	1: SL9 ON
	1	No. 1 registration roller clutch (CL1) drive signal	$\overline{RGCD1}$	J101-B20	1: CL1 ON
	2	No. 2 registration roller clutch solenoid (SL8) drive signal	$\overline{RGSD2}$	J103-B3	1: SL8 ON
	3	No. 3 registration roller clutch solenoids (SL801, SL702) drive signal	$\overline{RGSD3}$	J104-B5	1: SL801 or SL703 ON
	4	Not used.			
	5	Pick-up roller release solenoid 1 (SL7) drive signal	$\overline{PRSD1}$	J103-A8	1: SL7 ON
	6	Pick-up drive change solenoid 1 (SL6) drive signal	$\overline{PSSD1}$	J103-A7	1: SL6 ON
	7	Pick-up clutch 1 (CL2) drive signal	$\overline{PUCD1}$	J103-A5	1: CL2 ON
PC0	0	Pick-up clutch solenoid (SL701) drive signal	$\overline{PUSD}$	J104-B3	1: SL701 ON
	1	Pick-up roller release solenoid (SL703) drive signal	$\overline{PRSD}$	J104-B4	1: SL702 ON
	2	Pick-up clutch 2 (CL801) drive signal	$\overline{PUCD2}$	J104-B10	1: CL801 ON
	3	Pick-up drive change solenoid 2 (SL805) drive signal	$\overline{PSSD2}$	J104-B12	1: SL805 ON
	4	Pick-up roller release solenoid 2 (SL804) drive signal	$\overline{PRSD2}$	J104-B11	1: SL804 ON
	5	No. 4 registration roller clutch solenoid (SL802) drive signal	$\overline{RGSD4}$	J104-A11	1: SL802 ON
	6	Power switch (SW1) OFF signal	$\overline{PWOFF}$	J101-A15	1: SW1 OFF; PWOFF=0, when lamp is abnormal regardless of state.
	7	Add-on shutter solenoid (SL1)drive signal	$\overline{ADSD}$	J112-B12	1: SL1 OFF

Table 3-26B

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PA1	0	Cassette 1 lifter position detection (Q12) signal	C1LTP	J103-A3	1: Lifter up.
	1	Cassette 1 lifter position detection (Q13) signal	C2LTP	J103-A4	1: Lifter up.
	2	Cassette 3 lifter position detection (Q851) signal	C3LTP	J104-B8	1: Lifter up.
	3	Cassette 4 lifter position detection (Q853) signal	C4LTP	J104-A9	1: Lifter up.
	4	Scanner home position detection (Q8) signal	SCHP	J109-A11	1: Scanner at home position.
	5	Q105 (D/A converter) ready signal	DARDY0	–	0: Ready.
	6	Copyboard cover open/closed detection (MS2) signal	CBCC	J101-A12	0: Closed.
	7	Q106 (D/A converter) ready signal	DARDY1	–	0: Ready
PB1	0	Cassette 1 lifter motor (M8) drive signal	C1LTMD	J103-B4	1: M8 ON
	1	Cassette 2 lifter motor (M9) drive signal	C2LTMD	J103-B5	1: M9 ON
	2	Cassette 3 lifter motor (M801) drive signal	$\overline{\text{C3LTMD}}$	J104-B9	1: M801 ON
	3	Cassette 4 lifter motor (M802) drive signal	$\overline{\text{C4LTMD}}$	J104-A10	1: M802 ON
	4	Paper deck lifter motor (M701) down signal	LTDWN	J104-B2	0: Lifter down.
	5	Black developing assembly release solenoid (SL4) drive signal	$\overline{\text{BDRSD}}$	J101-B13	1: SL4 ON
	6	Color toner supply solenoid (SL3) drive signal	$\overline{\text{CTSSD}}$	J101-B12	1: SL3 ON
	7	Color toner density detection lamp (LA851) ON signal	CTLON	J101-A2	0: LA851 ON

Table 3-26C

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PC1	0	Laser power controller signal	LPCC/D	J111-B2	
	1	Laser power controller clock	LPCCLK	J111-A5	
	2	Not used.			
	3	Laser scanner motor (M11) drive signal	LMD	J111-A2	1: M11 ON
	4	Laser OFF signal	LOFF	J113-2	1: Laser OFF.
	5	Laser power controller communication signal 0	LPCCMD0	J111-A8	
	6	Laser power controller communication signal 1	LPCCMD1	J111-A7	
	7	Laser power controller communication signal 2	LPCCMD2	J111-A6	
PA2	0	Cassette 1 paper detection (Q10) signal	C1PD	J103-A1	1: Paper present.
	1	Cassette 2 paper detection (Q11) signal	C2PD	J103-A2	1: Paper present.
	2	Cassette 3 paper detection (Q850) signal	C3PD	J104-B7	1: Paper present.
	3	Cassette 4 paper detection (Q852) signal	C4PD	J104-A8	1: Paper present.
	4	CD unit changer manual feed paper detection (Q960) signal	MFPD	J105-5	1: Paper present.
	5	Paper deck paper detection (Q750) signal	PDPD	J104-B1	0: Paper present.
	6	Laser scanner motor ready signal	LMRDY	J111-A3	1: Ready.
	7	Laser power controller ready signal	LPCRDY	J111-A3	1: Ready.
PB2	0	D/A converter data 0	DA DATA0	–	
	1	D/A converter data 1	DA DATA1	–	
	2	D/A converter data 2	DA DATA2	–	
	3	D/A converter data 3	DA DATA3	–	
	4	D/A converter control signal 0	DACTL0	–	
	5	Scanning lamp (LA1) ON signal	$\overline{\text{LRD}}$	J109-A4	1: LA1 ON
	6	D/A converter control signal 1	DACTL1	–	
	7	Fixing heater (H1) ON signal	$\overline{\text{HTRD}}$	J109-B14	1: H1 ON

Table 3-26D

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PC2	0	Lower feeder unit drive command	LFON	–	Commands sent to sub CPU (Q102)
	1	Lower feeder unit control signal	LFCTL	–	
	2	Cross-way registration initial command	CRGINIT	–	
	3	Cross-way registration home position return command	CRGHOME	–	
	4	Delivery motor (M7) drive command	DFON	–	
	5	Delivery motor (M7) normal/reverse rotation switch command	DFFW	–	
	6	Cross-way registration set command	CRGSET	–	
	7	Not used.			
PA3	0	CD unit door detection (MS3) signal	$\overline{\text{CDUDC}}$	J101-A11	0: Door closed.
	1	Manual feed door detection (MS4) signal	$\overline{\text{MFDC}}$	J103-B6	0: Door closed.
	2	Lower right door detection (MS801) signal	$\overline{\text{RLDC}}$	J104-B13	0: Door closed.
	3	Scanner motor clock signal	$\overline{\text{M2LK}}$	J101-B8	0: Normal rotation.
	4	Main motor clock signal	$\overline{\text{M1LK}}$	J101-B5	0: Normal rotation.
	5	BD ready signal	BDRD	–	1: Ready.
	6	Scanning lamp ON detection signal	LAON	J109-A2	1: Lamp ON.
	7	Counter (CNT1) broken line detection signal	CNTRERR	–	1: CNT1 with broken line.
PB3	0	Not used.			
	1	Developing bias AC drive signal	$\overline{\text{HVBAC}}$	J102-B2	1: Developing bias (AC component) ON.
	2	AC transformer drive signal	$\overline{\text{HVAC}}$	J102-B8	1: AC transformer ON.
	3	Pick-up motor (M702/M803) drive signal	$\overline{\text{PUMD}}$	J104-B6	1: M702/M803 ON
	4	Counter (CNT2) drive signal	$\overline{\text{CNT2D}}$	J109-A7	1: CNT2 ON
	5	Cleaning belt drive solenoid (SL2) drive signal	$\overline{\text{CLBSD}}$	J109-B15	1: SL2 ON
	6	Control panel lamp drive signal	CPLD	J114-1	1: Lamp ON.
	7	Counter (CNT1, CCV) drive signal	$\overline{\text{CNT1D}}$ $\overline{\text{CCD}}$	J109-A9 J101-B14	0: Counter ON.

Table 3-26E

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PC3	0	Hopper motor (M10) drive signal	$\overline{HMD}$	J109-A5	1: M10 ON
	1	Heat exhaust fan (FM2) drive signal	$\overline{FM2D}$	J109-B17	1: FM2 ON
	2	Heat exhaust fan (FM2) high-speed rotation signal	FM2STB	J109-B16	1: High-speed rotation.
	3	Scanner cooling fan (FM1) drive signal	$\overline{FM1D}$	J101-A14	1: FM1 ON
	4	Feeder fan (FM3) drive signal	FM3D	J117-2	1: FM3 ON
	5	Main motor (M1) and pre-exposure lamp (LA2) drive signal	$\overline{MMD}$ $\overline{PEXP}$	J101-B6 J101-A16	1: M1, LA2 ON
	6	Scanner motor (M2) drive signal	$\overline{SCMD}$	J101-B11	1: M2 ON
	7	Scanner forward signal	$\overline{SCFW}$	J101-B10	1: Scanner moves forward.
PA4	0	Color toner out signal 1	$\overline{CTEP1}$	J101-A7	0: Color toner out.
	1	Color toner out signal 2	$\overline{CTEP2}$	J101-A8	0: Color toner out.
	2	Black toner out signal	$\overline{BTEP}$	J101-B2	0: Black toner out.
	3	Toner color signal 1	CT1	J101-A4	
	4	Toner color signal 2	CT2	J101-A5	
	5	Toner color signal 3	CT3	J101-A6	
	6	Control card detection signal	$\overline{CCDT}$	J101-B15	0: Control card present.
	7	CD unit changer busy signal	$\overline{BUSY}$	J105-6	0: CD unit changer busy.
PB4	0	Pulse signal 0	LDGT0	J110-B4	Power supply for control panel LED ON
	1	Pulse signal 1	LDGT1	J110-A3	
	2	Pulse signal 2	LDGT2	J110-B3	
	3	Pulse signal 3	LDGT3	J110-A2	
	4	Pulse signal 4	LDGT4	J110-B2	
	5	Pulse signal 5	LDGT5	J110-A1	
	6	Pulse signal 6	LDGT6	–	
	7	Power check LED ON signal	$\overline{PLEDD}$	J110-B1	1: LED ON
PC4	0	ON signal 0	SEG0	J110-B8	Control panel LED ON signals
	1	ON signal 1	SEG1	J110-A7	
	2	ON signal 2	SEG2	J110-B7	
	3	ON signal 3	SEG3	J110-A6	
	4	ON signal 4	SEG4	J110-B6	
	5	ON signal 5	SEG5	J110-A5	
	6	ON signal 6	SEG6	J110-B5	
	7	ON signal 7	SEG7	J110-A4	

Table 3-26F

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PA5	0	Key read signal 0	RTN0	J110-A15 J102-A6 J104-A6 J108-1	Read operations from switches on control panel
	1	Key read signal 1	RTN1	J110-B15 J102-A5 J104-A5 J108-2	
	2	Key read signal 2	RTN2	J110-A14 J102-A4 J104-A4 J108-3	
	3	Key read signal 3	RTN3	J110-B14 J102-A3 J104-A3 J108-4	
	4	Key read signal 4	RTB4	J110-A13 J118-1 J104-A12 J108-5	
	5	Key read signal 5	RTN5	J110-B13 J118-2 J108-6	
	6	Key read signal 6	RTN6	J110-A12 J118-3 J105-1 J108-7	
	7	Key read signal 7	RTN7	J110-B12 J118-4 J111-B3 J108-8	

Table 3-26G

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
PB5	0	Pulse signal 0	KDGT0	J110-A11	Power supply for reading operations from keys on control panel
	1	Pulse signal 1	KDGT1	J110-B11	
	2	Pulse signal 2	KDGT2	J110-A10	
	3	Pulse signal 3	KDGT3	J110-B10	
	4	Pulse signal 4	KDGT4	J110-A9	
	5	Pulse signal 5	KDGT5	J110-B9	
	6	Pulse signal 6	KDGT6	J110-A8 J102-A2 J118-5	
	7	Pulse signal 7	KDGT7	J102-A1 J105-2 J111-B4	
PC5	0	Pulse signal 8	KDGT8	J108-9 J104-A2 J104-A14	
	1	Pulse signal 9	KDGT9	J108-10 J104-A1 J104-A13	
	2	Pulse signal 10	KDGT10	J108-11	
	3	Pulse signal	WATCHDOG	–	Run-away detection
	4	CD unit changer manual feed pick-up start command	$\overline{\text{MFON}}$	J105-10	1: Start
	5	CD unit changer manual feed shutter solenoid (SL905) drive signal	$\overline{\text{MFSSD}}$	J105-9	1: SL905 ON
	6	CD unit changer manual feeder roller solenoid (SL904) drive signal	$\overline{\text{MFRSD}}$	J105-8	1: SL904 ON
	7	CD unit reset signal	$\overline{\text{RESET}}$	J105-7	1: Reset
SPA	0	Not used.			
	1	Scanner at document edge (Q9) signal	SCDP	J109-A14	0: Scanner at document edge.
	2	Lower feeder motor 2 (M6) drive signal	$\overline{\text{LF2A}}$	J103-B12	Alternates between '1' and '0' while M6 rotates.
	3		LF2A	J103-B11	
	4		LF2B	J103-B9	
	5		$\overline{\text{LF2B}}$	J103-B8	
	6	M6 power switch signal	LF2STB $\overline{\text{LF2STB}}$	J103-B10 J103-B7	1: 5V 0: 24V
	7	Not used.			

Table 3-26H

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
SPB	0	Lens motor (M3) drive signal	LNA	J112-A5	Alternates between '1' and '0' while M3 rotates.
	1		$\overline{\text{LNA}}$	J112-A4	
	2		LNB	J112-A3	
	3		$\overline{\text{LNB}}$	J112-A1	
	4	Cross-way registration motor (M4) drive signal	CRGA	J102-A12	Alternates between '1' and '0' while M4 rotates
	5		$\overline{\text{CRGA}}$	J102-A11	
	6		CRGB	J102-A9	
	7		$\overline{\text{CRGB}}$	J102-A8	
SPC	0	Lower feeder unit drive command	DFON	–	Commands sent from main CPU (Q101)
	1	Lower feeder unit control signal	DFCTL	–	
	2	Cross-way registration initial command	CRGINIT	–	
	3	Cross-way registration home position	CRGHOME	–	
	4	Scanner speed control signal	SCCLK	J101-B9	
	5	Cross-way registration set command	CRGSET	–	Command sent from main CPU (Q101)
	6	Lens home position (Q7) signal	LHP	J112-A11	1: Lens at home position.
	7	Cross-way registration paper edge detection (Q6) signal	PDP2	J102-B11	1: Paper present.
SPE	0	Lower feeder motor 1 (M5) drive signal	LF1A	J116-1	Alternates between '1' and '0' while M5 rotates.
	1		$\overline{\text{LF1A}}$	J116-2	
	2		LF1B	J116-4	
	3		$\overline{\text{LF1B}}$	J116-5	
	4	M5 power supply switch signal	LF1STB $\overline{\text{LF1STB}}$	J116-3 J116-6	1: 5V 0: 24V
	5	Not used.			
	6	Not used.			
	7	Not used.			
SPF	0	Delivery feed motor (M7) drive command	DFON	–	Commands sent from main CPU (Q101)
	1	Delivery feed motor (M7) normal/reverse rotation switch command	DFFW	–	
	2	IPC error signal	IPCINT	–	Resets IPC when '0'.
	3	Waste toner detection (MS1) signal	$\overline{\text{WTOF}}$	J101-A13	Alternates between '1' and '0' when drum is full of waste toner.
	4	Lower feeder unit outlet paper detection (Q14) signal	$\overline{\text{PDP5}}$	J103-B2	0: paper present.

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
SPF	5	Address signal	ADRS1		
	6		ADRS2		
	7		ADRS3		
SPG	0	Delivery feed motor (M7) drive signal	DFA	J109-B6	Alternates between '1' and '0' while M7 rotates.
	1		DFA	J109-B5	
	2		DFB	J109-B3	
	3		DFB	J109-B2	
	4	Lens motor (M3) power supply switch signal	LNSTB	J112-A2	1: 5V 0: 24V
	5	Cross-way motor (M4) power supply switch signal	CRGSTB	J102-A7 J102-A10	1: 5V 0: 24V
	6	Not used.			
	7	Not used.			
MT6	0	Cassette 1 size detection switch	RTN0	J102-A6	'1' when switch is pressed.
	1		RTN1	J102-A5	
	2		RTN2	J102-A4	
	3		RTN3	J102-A3	
	4	Inch system connect signal	RTN4	J118-1	1: Inch. (4R3E)
	5	A system connect signal	RTN5	J118-2	1: A system. (2R2E)
	6	Counter operation 115/220/240V system connect signal	RTN6	J118-3	1: 115/220/240V system.
	7	Not used.			
MT7	0	Cassette 2 size detection switch	RTN0	J102-A6	'1' when switch is pressed.
	1		RTN1	J102-A5	
	2		RTN2	J102-A4	
	3		RTN3	J102-A3	
	4	Not used.			
	5	Not used.			
	6	CD unit changer connect signal	RTN6	J105-1	1: CD unit changer present.
	7	Service mode input push-switch (SW501)	RTN7	J111-B3	1: SW501 ON

Table 3-26J

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(NP-4835)

Address	bit	Description	Signal	Pin	Remarks
MT8	0	Cassette 3 size detection switch/Paper deck size detection switch	RTN0	J104-A6	'1' when switch is pressed; if paper deck, RTN3 is connect signal.
	1		RTN1	J104-A5	
	2		RTN2	J104-A4	
	3		RTN3	J104-A3	
	4	Cassette 3 connect signal	RTN4	J104-A12	1: Cassette 3 present.
	5	Not used.			
	6	Not used.			
	7	Not used.			
MT9	0	Cassette 4 size detection switch	RTN0	J104-A6	'1' when switch is pressed.
	1		RTN1	J104-A5	
	2		RTN2	J104-A4	
	3		RTN3	J104-A3	
	4	Cassette 4 connect signal	RTN4	J104-A12	1: Cassette 4 present.
	5	Not used.			
	6	Not used.			
	7	Not used.			
MTA		For factory adjustment.			

Table 3-26K

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PA0	0	Manual feed paper detection (Q4) signal	$\overline{\text{MFPD}}$	J103-A9	0: Paper present.
	1	Pre No.3 registration paper detection (Q16) signal	PDP7	J103-B13	1: Paper present.
	2	Pre No.4 registration paper detection (Q854) signal	$\overline{\text{PDP8}}$	J104-A7	0: Paper present.
	3	Pre No.2 registration paper detection (Q854) signal	$\overline{\text{PDP6}}$	J103-B1	0: Paper present.
	4	Pre No.1 registration paper detection (Q5) signal	PDP1	J102-B14	1: Paper present.
	5	Delivery detection (Q2) signal	$\overline{\text{PDP3}}$	J109-B8	0: Paper present.
	6	Lower feeder unit inlet paper detection (Q3) signal	$\overline{\text{PDP4}}$	J109-B11	0: Paper present.
	7	Lower feeder unit outlet paper detection (Q14) signal	$\overline{\text{PDP5}}$	J103-B2	0: Paper present.
PB0	0	Manual feed shutter solenoid (SL9) drive signal	$\overline{\text{MFSSD}}$	J103-A6	1: SL9 ON
	1	No. 1 registration roller clutch (CL1) drive signal	$\overline{\text{RGCD1}}$	J101-B14	1: CL1 ON
	2	No. 2 registration roller clutch solenoid (SL8) drive signal	$\overline{\text{RGSD2}}$	J103-B3	1: SL8 ON
	3	No. 3 registration roller clutch solenoids (SL801, SL702) drive signal	$\overline{\text{RGSD3}}$	J104-B5	1: SL801 or SL703 ON
	4	Pick-up motor (M702/M803) drive signal	$\overline{\text{PUMD}}$	J104-B6	1: M702/M803 ON
	5	Pick-up roller release solenoid 1 (SL7) drive signal	$\overline{\text{PRSD1}}$	J103-A8	1: SL7 ON
	6	Pick-up drive change solenoid 1 (SL6) drive signal	$\overline{\text{PSSD1}}$	J103-A7	1: SL6 ON
	7	Pick-up clutch 1 (CL2) drive signal	$\overline{\text{PUCD1}}$	J103-A5	1: CL2 ON

Table 3-26AA

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PC0	0	Pick-up clutch solenoid (SL701) drive signal	$\overline{PUSD}$	J104-B3	1: SL701 ON
	1	Pick-up roller release solenoid (SL703) drive signal	$\overline{PRSD}$	J104-B4	1: SL702 ON
	2	Pick-up clutch 2 (CL801) drive signal	$\overline{PUCD2}$	J104-B10	1: CL801 ON
	3	Pick-up drive change solenoid 2 (SL805) drive signal	$\overline{PSSD2}$	J104-B12	1: SL805 ON
	4	Pick-up roller release solenoid 2 (SL804) drive signal	$\overline{PRSD2}$	J104-B11	1: SL804 ON
	5	No. 4 registration roller clutch solenoid (SL802) drive signal	$\overline{RGSD4}$	J104-A11	1: SL802 ON
	6	Power switch (SW1) OFF signal	$\overline{PWOFF}$	J101-A6	1: SW1 OFF; PWOFF=0, when lamp is abnormal regardless of state.
	7	Not used.			
PA1	0	Cassette 1 lifter position detection (Q12) signal	C1LTP	J103-A3	1: Lifter up.
	1	Cassette 1 lifter position detection (Q13) signal	C2LTP	J103-A4	1: Lifter up.
	2	Cassette 3 lifter position detection (Q851) signal	C3LTP	J104-B8	1: Lifter up.
	3	Cassette 4 lifter position detection (Q853) signal	C4LTP	J104-A9	1: Lifter up.
	4	Scanner home position detection (Q8) signal	SCHP	J109-A11	1: Scanner at home position.
	5	Q105 (D/A converter) ready signal	DARDY0	–	0: Ready.
	6	Copyboard cover open/closed detection (MS2) signal	CBCC	J101-A3	0: Closed.
	7	Q106 (D/A converter) ready signal	DARDY1	–	0: Ready

Table 3-26AB

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PB1	0	Cassette 1 lifter motor (M8) drive signal	C1LTMD	J103-B4	1: M8 ON
	1	Cassette 2 lifter motor (M9) drive signal	C2LTMD	J103-B5	1: M9 ON
	2	Cassette 3 lifter motor (M801) drive signal	$\overline{\text{C3LTMD}}$	J104-B9	1: M801 ON
	3	Cassette 4 lifter motor (M802) drive signal	$\overline{\text{C4LTMD}}$	J104-A10	1: M802 ON
	4	Paper deck lifter motor (M701) down signal	LTDWN	J104-B2	0: Lifter down.
	5	Cleaning belt drive solenoid (SL2) drive signal	$\overline{\text{CLBSD}}$	J109-B15	1: SL2 ON
	6	Counter (CNT1, CCV) drive signal	$\overline{\text{CNT1D}}$ $\overline{\text{CCD}}$	J109-A9 J101-B9	0: Counter ON.
	7	Counter (CNT2) drive signal	$\overline{\text{CNT2D}}$	J109-A7	1: CNT2 ON
PC1	0	Hopper motor (M10) drive signal	$\overline{\text{HMD}}$	J109-A5	1: M10 ON
	1	Heat exhaust fan (FM2) drive signal	$\overline{\text{FM2D}}$	J109-B17	1: FM2 ON
	2	Heat exhaust fan (FM2) high-speed rotation signal	FM2STB	J109-B16	1: High-speed rotation.
	3	Scanner cooling fan (FM1) drive signal	$\overline{\text{FM1D}}$	J101-A14	1: FM1 ON
	4	Feeder fan (FM3) drive signal	FM3D	J117-2	1: FM3 ON
	5	Main motor (M1) and pre-exposure lamp (LA2) drive signal	$\overline{\text{DRMD}}$ $\overline{\text{PEXP}}$	J101-B3 J101-A7	1: M1, LA2 ON
	6	Scanner motor (M2) drive signal	$\overline{\text{SCMD}}$	J101-B8	1: M2 ON
	7	Scanner forward signal	$\overline{\text{SCFW}}$	J101-B7	1: Scanner moves forward.

Table 3-26AC

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PA2	0	Cassette 1 paper detection (Q10) signal	C1PD	J103-A1	1: Paper present.
	1	Cassette 2 paper detection (Q11) signal	C2PD	J103-A2	1: Paper present.
	2	Cassette 3 paper detection (Q850) signal	C3PD	J104-B7	1: Paper present.
	3	Cassette 4 paper detection (Q852) signal	C4PD	J104-A8	1: Paper present.
	4	Not used.			
	5	Paper deck paper detection (Q750) signal	$\overline{\text{PDPD}}$	J104-B1	0: Paper present.
	6	Black toner out signal	$\overline{\text{BTEP}}$	J101-A13	0: Black toner out.
	7	Control card detection signal	$\overline{\text{CCDT}}$	J101-B10	0: Control card present.
PB2	0	D/A converter data 0	DA DATA0	–	
	1	D/A converter data 1	DA DATA1	–	
	2	D/A converter data 2	DA DATA2	–	
	3	D/A converter data 3	DA DATA3	–	
	4	D/A converter control signal 0	DACTL0	–	
	5	Scanning lamp (LA1) ON signal	$\overline{\text{LRD}}$	J109-A4	1: LA1 ON
	6	D/A converter control signal 1	DACTL1	–	
	7	Fixing heater (H1) ON signal	$\overline{\text{HTRD}}$	J109-B14	1: H1 ON

Table 3-26AD

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PC2	0	Delivery motor (M7) normal/reverse rotation switch command	DFFW	–	
	1	Lower feeder unit drive command	LFON	–	
	2	D.P request signal	DPRQ	–	
	3	D.P acknowledge signal	DPM	–	
	4	D.P busy signal	DPBS	–	
	5	Not used.			
	6	Not used.			
	7	Not used.			
PA3	0	Key read signal 0	RTN0	J110-A15 J102-A6 J104-A6 J108-1	Read operations from switches on control panel
	1	Key read signal 1	RTN1	J110-B15 J102-A5 J104-A5 J108-2	
	2	Key read signal 2	RTN2	J110-A14 J102-A4 J104-A4 J108-3	
	3	Key read signal 3	RTN3	J110-B14 J102-A3 J104-A3 J108-4	
	4	Key read signal 4	RTB4	J110-A13 J118-1 J104-A12 J108-5	
	5	Key read signal 5	RTN5	J110-B13 J118-2 J108-6	
	6	Key read signal 6	RTN6	J110-A12 J118-3 J105-1 J108-7	
	7	Key read signal 7	RTN7	J110-B12 J118-4 J111-B3 J108-8	

Table 3-26AE

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CANON NP-4835/4835i/4835S/4335 REV.0 JUNE 1989 PRINTED IN JAPAN (IMPRIME AU JAPON)

(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PB3	0	Pulse signal 0	KDGT0	J110-A11	Power supply for reading operations from keys on control panel
	1	Pulse signal 1	KDGT1	J110-B11	
	2	Pulse signal 2	KDGT2	J110-A10	
	3	Pulse signal 3	KDGT3	J110-B10	
	4	Pulse signal 4	KDGT4	J110-A9	
	5	Pulse signal 5	KDGT5	J110-B9	
	6	Pulse signal 6	KDGT6	J110-A8 J102-A2 J118-5	
	7	Pulse signal 7	KDGT7	J102-A1 J105-2 J111-B4	
PC3	0	Pulse signal 8	KDGT8	J108-9 J104-A2 J104-A14	
	1	Pulse signal 9	KDGT9	J108-10 J104-A1 J104-A13	
	2	Pulse signal 10	KDGT10	J108-11	
	3	Pulse signal	WATCHDOG	–	Run-away detection
	4	Developing bias AC drive signal	$\overline{\text{HVBAC}}$	J102-B2	1: Developing bias (AC component) ON.
	5	AC transformer drive signal	$\overline{\text{HVAC}}$	J102-B8	1: AC transformer ON.
	6	Control panel lamp drive signal	CPLD	J114-1	1: Lamp ON.
	7	Not used			

Table 3-26AF

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PA4	0	Not used.			
	1	Manual feed door detection (MS4) signal	$\overline{\text{MFDC}}$	J103-B6	0: Door closed.
	2	Lower right door detection (MS801) signal	$\overline{\text{RLDC}}$	J104-B13	0: Door closed.
	3	Scanner motor clock signal	$\overline{\text{M2LK}}$	J101-B5	0: Normal rotation.
	4	Main motor clock signal	$\overline{\text{M1LK}}$	J101-B2	0: Normal rotation.
	5	IPC error signal	IPCINT	–	Resets IPC when '0'.
	6	Waste toner detection (MS1) signal	$\overline{\text{WTOF}}$	J101-A4	Alternates between '1' and '0' when drum is full of waste toner.
	7	Counter (CNT1) broken line detection signal	CNTRERR	–	1: CNT1 with broken line.
PB4	0	Pulse signal 0	LDGT0	J110-B4	Power supply for control panel LED ON
	1	Pulse signal 1	LDGT1	J110-A3	
	2	Pulse signal 2	LDGT2	J110-B3	
	3	Pulse signal 3	LDGT3	J110-A2	
	4	Pulse signal 4	LDGT4	J110-B2	
	5	Pulse signal 5	LDGT5	J110-A1	
	6	Pulse signal 6	LDGT6	–	
	7	Power check LED ON signal	$\overline{\text{PLEDD}}$	J110-B1	1: LED ON

Table 3-26AG

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
PC4	0	ON signal 0	SEG0	J110-B8	Control panel LED ON signals
	1	ON signal 1	SEG1	J110-A7	
	2	ON signal 2	SEG2	J110-B7	
	3	ON signal 3	SEG3	J110-A6	
	4	ON signal 4	SEG4	J110-B6	
	5	ON signal 5	SEG5	J110-A5	
	6	ON signal 6	SEG6	J110-B5	
	7	ON signal 7	SEG7	J110-A4	
SPA	0	Lower feeder motor 2 (M6) drive signal	LF2A	J103-B12	Alternates between '1' and '0' while M6 rotates.
	1		LF2B	J103-B9	
	2		$\overline{\text{LF2A}}$	J103-B11	
	3		$\overline{\text{LF2B}}$	J103-B8	
	4	Lower feeder motor 1 (M5) drive signal	LF1A	J116-1	Alternates between '1' and '0' while M5 rotates.
	5		LF1B	J116-4	
	6		$\overline{\text{LF1A}}$	J116-2	
	7		$\overline{\text{LF1B}}$	J116-5	
SPB	0	Delivery feed motor (M7) drive signal	DFA	J109-B6	Alternates between '1' and '0' while M7 rotates.
	1		DFB	J109-B3	
	2		$\overline{\text{DFA}}$	J109-B5	
	3		$\overline{\text{DFB}}$	J109-B2	
	4	Lens motor (M3) drive signal	LNA	J112-A5	Alternates between '1' and '0' while M3 rotates.
			$\overline{\text{LNA}}$	J112-A4	
	5		LNB	J112-A3	
			$\overline{\text{LNB}}$	J112-A1	
	6	Cross-way registration motor (M4) drive signal	CRGA	J102-A12	Alternates between '1' and '0' while M4 rotates.
			$\overline{\text{CRGA}}$	J102-A11	
	7		CRGB	J102-A9	
			$\overline{\text{CRGB}}$	J102-A8	

Table 3-26AH

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
SPC	0	Lens motor (M3) power supply switch signal	LNSTB	J112-A2	1: 5 V 0: 24 V
	1	Cross-way motor (M4) power supply switch signal	CRGSTB	J102-A7	1: 5 V 0: 24 V
	2	Delivery feed motor (M7) normal/reverse rotation switch command	DFFW	–	Commands sent from main CPU (Q101)
	3	Lower feeder unit drive command	DFON	–	
	4	Lower feeder unit control signal	DFCTL	–	
	5	D.P request signal	DPRQ	–	
	6	Lens home position (Q7) signal	LHP	J112-A10	1: Lens at home position.
	7	Cross-way registration paper edge detection (Q6) signal	PDP2	J102-B11	1: Paper present.
SPF	0	Pulse signal 0	BDGT0	J119-A13	Power supply for blank exposure lamp
	1	Pulse signal 1	BDGT1	J119-B13	
	2	Pulse signal 2	BDGT2	J119-A14	
	3	Pulse signal 3	BDGT3	J119-B14	
	4	Pulse signal 4	BDGT4	J119-A15	
	5	Blank exposure lamp intensity switching	BSTRONG	J119-B15	
	6	D.P busy signal	DPBS	–	
	7	Blank exposure (side margin) lamp ON signal	SBLNC	J119-A16	

Table 3-26AI

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CANON NP-4835/4835I/4835S/4335 REV.0 JUNE 1989 PRINTED IN JAPAN (IMPRIME AU JAPON)

(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
MT6	0	Cassette 1 size detection switch	RTN0	J102-A6	'1' when switch is pressed.
	1		RTN1	J102-A5	
	2		RTN2	J102-A4	
	3		RTN3	J102-A3	
	4	Inch system connect signal	RTN4	J118-1	1: Inch. (4R3E)
	5	A system connect signal	RTN5	J118-2	1: A system. (2R2E)
	6	Counter operation 115/220/240V system connect signal	RTN6	J118-3	1: 115/220/240V system.
	7	Not used.			
MT7	0	Cassette 2 size detection switch	RTN0	J102-A6	'1' when switch is pressed.
	1		RTN1	J102-A5	
	2		RTN2	J102-A4	
	3		RTN3	J102-A3	
	4	Not used.			
	5	Not used.			
	6	Not used.			
	7	Service mode input push-switch (SW501)	RTN7	J113-1	1: SW501 ON
MT8	0	Cassette 3 size detection switch/Paper deck size detection switch	RTN0	J104-A6	'1' when switch is pressed; if paper deck, RTN3 is connect signal.
	1		RTN1	J104-A5	
	2		RTN2	J104-A4	
	3		RTN3	J104-A3	
	4	Cassette 3 connect signal	RTN4	J104-A12	1: Cassette 3 present.
	5	Not used.			
	6	Not used.			
	7	Not used.			

Table 3-26AJ

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(NP-4835S/4335)

Address	bit	Description	Signal	Pin	Remarks
MT9	0	Cassette 4 size detection switch	RTN0	J104-A6	'1' when switch is pressed.
	1		RTN1	J104-A5	
	2		RTN2	J104-A4	
	3		RTN3	J104-A3	
	4	Cassette 4 connect signal	RTN4	J104-A12	1: Cassette 4 present.
	5	Not used.			
	6	Not used.			
	7	Not used.			
MTA		For factory adjustment.			

Table 3-26AK

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PA0	0	Manual feed paper detection (Q4) signal	$\overline{\text{MFPD}}$	J103-A9	0: Paper present.
	1	Pre No.3 registration paper detection (Q16) signal	PDP7	J103-B13	1: Paper present.
	2	Pre No.4 registration paper detection (Q854) signal	$\overline{\text{PDP8}}$	J104-A7	0: Paper present.
	3	Pre No. 2 registration paper detection (Q15) signal	$\overline{\text{PDP6}}$	J103-B1	0: Paper present.
	4	Pre No.1 registration paper detection (Q5) signal	PDP1	J102-B14	1: Paper present.
	5	Delivery detection (Q2) signal	$\overline{\text{PDP3}}$	J109-B8	0: Paper persent.
	6	Lower feeder unit inlet paper detection (Q3) signal	$\overline{\text{PDP4}}$	J109-B11	0: Paper present.
	7	Lower feeder unit outlet paper detection (Q14) signal	$\overline{\text{PDP5}}$	J103-B2	0: Paper present.
PB0	0	Manual feed shutter solenoid (SL9) drive signal	$\overline{\text{MFSSD}}$	J103-A6	1: SL9 ON
	1	No. 1 registration roller clutch (CL1) drive signal	$\overline{\text{RGCD1}}$	J101-B20	1: CL1 ON
	2	No. 2 registration roller clutch solenoid (SL8) drive signal	$\overline{\text{RGSD2}}$	J103-B3	1: SL8 ON
	3	No. 3 registration roller clutch solenoids (SL801, SL702) drive signal	$\overline{\text{RGSD3}}$	J104-B5	1: SL801 or SL703 ON
	4	Pick-up motor (M702/M803) drive signal	$\overline{\text{PUMD}}$	J104-B6	1: M702/M803 ON
	5	Pick-up roller release solenoid 1 (SL7) drive signal	$\overline{\text{PRSD1}}$	J103-A8	1: SL7 ON
	6	Pick-up drive change solenoid 1 (SL6) drive signal	$\overline{\text{PSSD1}}$	J103-A7	1: SL6 ON
	7	Pick-up clutch 1 (CL2) drive signal	$\overline{\text{PUCD1}}$	J103-A5	1: CL2 ON
PC0	0	Pick-up clutch solenoid (SL701) drive signal	$\overline{\text{PUSD}}$	J104-B3	1: SL701 ON
	1	Pick-up roller release solenoid (SL703) drive signal	$\overline{\text{PRSD}}$	J104-B4	1: SL702 ON
	2	Pick-up clutch 2 (CL801) drive signal	$\overline{\text{PUCD2}}$	J104-B10	1: CL801 ON
	3	Pick-up drive change solenoid 2 (SL805) drive signal	$\overline{\text{PSSD2}}$	J104-B12	1: SL805 ON
	4	Pick-up roller release solenoid 2 (SL804) drive signal	$\overline{\text{PRSD2}}$	J104-B11	1: SL804 ON
	5	No. 4 registration roller clutch solenoid (SL802) drive signal	$\overline{\text{RGSD4}}$	J104-A11	1: SL802 ON

Table 3-26BA

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PC0	6	Power switch (SW1) OFF signal	$\overline{\text{PWOFF}}$	J101-A6	1: SW1 OFF; PWOFF=0, when lamp is abnormal regardless of state.
	7	Add-on shutter solenoid (SL1) drive signal	$\overline{\text{ADSD}}$	J112-B12	1: SL1 OFF
PA1	0	Cassette 1 lifter position detection (Q12) signal	C1LTP	J103-A3	1: Lifter up.
	1	Cassette 1 lifter position detection (Q13) signal	C2LTP	J103-A4	1: Lifter up.
	2	Cassette 3 lifter position detection (Q851) signal	C3LTP	J104-B8	1: Lifter up.
	3	Cassette 4 lifter position detection (Q853) signal	C4LTP	J104-A9	1: Lifter up.
	4	Scanner home position detection (Q8) signal	SCHP	J109-A11	1: Scanner at home position
	5	Q105 (D/A converter) ready signal	DARDY0	–	0: Ready.
	6	Copyboard cover open/closed detection (MS2) signal	CBCC	J101-A12	0: Closed.
	7	Q106 (D/A converter) ready signal	DARDY1	–	0: Ready
PB1	0	Cassette 1 lifter motor (M8) drive signal	C1LTMD	J103-B4	1: M8 ON
	1	Cassette 2 lifter motor (M9) drive signal	C2LTMD	J103-B5	1: M9 ON
	2	Cassette 3 lifter motor (M801) drive signal	$\overline{\text{C3LTMD}}$	J104-B9	1: M801 ON
	3	Cassette 4 lifter motor (M802) drive signal	$\overline{\text{C4LTMD}}$	J104-A10	1: M802 ON
	4	Paper deck lifter motor (M701) down signal	LTDWN	J104-B2	0: Lifter down.
	5	Cleaning belt drive solenoid (SL2) drive signal	$\overline{\text{CLBSD}}$	J109-B15	1: SL2 ON
	6	Counter (CNT1, CCV) drive signal	$\overline{\text{CNT1D}}$ $\overline{\text{CCD}}$	J109-A9 J101-B14	0: Counter ON.
	7	Counter (CNT2) drive signal	$\overline{\text{CNT2D}}$	J109-A7	0: CNT2 ON
PC1	0	Hopper motor (M10) drive signal	$\overline{\text{HMD}}$	J109-A5	1: M10 ON
	1	Heat exhaust fan (FM2) drive signal	$\overline{\text{FM2D}}$	J109-B17	1: FM2 ON
	2	Heat exhaust fan (FM2) high-speed rotation signal	FM2STB	J109-B16	1: High-speed rotation
	3	Scanner cooling fan (FM1) drive signal	$\overline{\text{FM1D}}$	J101-A14	1: FM1 ON

Table 3-26BB

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PC1	4	Feeder fan (FM3) drive signal	FM3D	J117-2	1: FM3 ON
	5	Main motor (M1) and pre-exposure lamp (LA2) drive signal	$\overline{\text{DRMD}}$ $\overline{\text{PEXP}}$	J101-B6 J101-A15	1: M1, LA2 ON
	6	Scanner motor (M2) drive signal	$\overline{\text{SCMD}}$	J101-B11	1: M2 ON
	7	Scanner forward signal	$\overline{\text{SCFW}}$	J101-B10	1: Scanner moves forward.
PA2	0	Cassette 1 paper detection (Q10) signal	C1PD	J103-A1	1: Paper present.
	1	Cassette 2 paper detection (Q11) signal	C2PD	J103-A2	1: Paper present.
	2	Cassette 3 paper detection (Q850) signal	C3PD	J104-B7	1: Paper present.
	3	Cassette 4 paper detection (Q852) signal	C4PD	J104-A8	1: Paper present.
	4	CD unit changer manual feed paper detection (Q960) signal	MFPD	J105-5	1: Paper present.
	5	Paper deck paper detection (Q750) signal	$\overline{\text{PDPD}}$	J104-B1	0: Paper present.
	6	Black toner out signal	$\overline{\text{BTEP}}$	J101-B2	0: Black toner out.
	7	Control card detection signal	$\overline{\text{CCDT}}$	J101-B15	0: Control card present.
PB2	0	D/A converter data 0	DA DATA0	–	
	1	D/A converter data 1	DA DATA1	–	
	2	D/A converter data 2	DA DATA2	–	
	3	D/A converter data 3	DA DATA3	–	
	4	D/A converter control signal 0	DACTL0	–	
	5	Scanning lamp (LA1) ON signal	$\overline{\text{LRD}}$	J109-A4	1: LA1 ON
	6	D/A converter control signal 1	DACTL1	–	
	7	Fixing heater (H1) ON signal	$\overline{\text{HTRD}}$	J109-B14	1: H1 ON
PC2	0	Delivery motor (M7) normal/reverse rotation switch command	DFFW	–	
	1	Lower feeder unit drive command	LFON	–	
	2	D.P. request signal	DPRQ	–	
	3	D.P. acknowledge signal	DPM	–	
	4	D.P. busy signal	DPBS	–	
	5	Not used.			
	6	Not used.			
	7	Not used.			

Table 3-26BC

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PA3	0	Key read signal 0	RTN0	J110-A15 J102-A6 J104-A6 J108-1	Read operations from switches on control panel
	1	Key read signal 1	RTN1	J110-B15 J102-A5 J104-A5 J108-2	
	2	Key read signal 2	RTN2	J110-A14 J102-A4 J104-A4 J108-3	
	3	Key read signal 3	RTN3	J110-B14 J102-A3 J104-A3 J108-4	
	4	Key read signal 4	RTB4	J110-A13 J118-1 J104-A12 J108-5	
	5	Key read signal 5	RTN5	J110-B13 J118-2 J108-6	
	6	Key read signal 6	RTN6	J110-A12 J118-3 J105-1 J108-7	
	7	Key read signal 7	RTN7	J110-B12 J118-4 J111-B3 J108-8	
PB3	0	Pulse signal 0	KDGT0	J110-A11	Power supply for reading operations from keys on control panel
	1	Pulse signal 1	KDGT1	J110-B11	
	2	Pulse signal 2	KDGT2	J110-A10	
	3	Pulse signal 3	KDGT3	J110-B10	
	4	Pulse signal 4	KDGT4	J110-A9	
	5	Pulse signal 5	KDGT5	J110-B9	
	6	Pulse signal 6	KGDT6	J110-A8 J102-A2 J118-5	
	7	Pulse signal 7	KDGT7	J102-A1 J105-2 J111-B4	

Table 3-26BD

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PC3	0	Pulse signal 8	KDGT8	J108-9 J104-A2 J104-A14	Power supply for reading operations from keys on control panel
	1	Pulse signal 9	KDGT9	J108-10 J104-A1 J104-A13	
	2	Pulse signal 10	KDGT10	J108-11	
	3	Pulse signal	WATCHDOG	–	Run-away detection
	4	Developing bias AC drive signal	$\overline{\text{HVBAC}}$	J102-B2	1: Developing bias (AC component) ON.
	5	AC transformer drive signal	$\overline{\text{HVAC}}$	J102-B8	1: AC transformer ON.
	6	Control panel lamp drive signal	CPLD	J114-1	1: Lamp ON.
	7	Not used.			
PA4	0	CD unit door detection (MS3) signal	$\overline{\text{CDUDC}}$	J101-A11	0: Door closed.
	1	Manual feed door detection (MS4) signal	$\overline{\text{MFDC}}$	J103-B6	0: Door closed.
	2	Lower right door detection (MS801) signal	$\overline{\text{RLDC}}$	J104-B13	0: Door closed.
	3	Scanner motor clock signal	$\overline{\text{M2LK}}$	J101-B5	0: Normal rotation.
	4	Main motor clock signal	$\overline{\text{M1LK}}$	J101-B8	0: Normal rotation.
	5	IPC error signal	IPCINT	–	Resets IPC when '0'.
	6	Waste toner detection (MS1) signal	$\overline{\text{WTOF}}$	J101-A13	Alternates between '1' and '0' when drum is full of waste toner.
	7	Counter (CNT1) broken line detection signal	CNTRERR	–	1: CNT1 with broken line.
PB4	0	Pulse signal 0	LDGT0	J110-B4	Power supply for control panel LED ON
	1	Pulse signal 1	LDGT1	J110-A3	
	2	Pulse signal 2	LDGT2	J110-B3	
	3	Pulse signal 3	LDGT3	J110-A2	
	4	Pulse signal 4	LDGT4	J110-B2	
	5	Pulse signal 5	LDGT5	J110-A1	
	6	Pulse signal 6	LDGT6	–	
	7	Power check LED ON signal	$\overline{\text{PLEDD}}$	J110-B1	1: LED ON

Table 3-26BE

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PC4	0	ON signal 0	SEG0	J110-B8	Control panel LED ON signals
	1	ON signal 1	SEG1	J110-A7	
	2	ON signal 2	SEG2	J110-B7	
	3	ON signal 3	SEG3	J110-A6	
	4	ON signal 4	SEG4	J110-B6	
	5	ON signal 5	SEG5	J110-A5	
	6	ON signal 6	SEG6	J110-B5	
	7	ON signal 7	SEG7	J110-A4	
PA5	0	Color toner out signal 1	$\overline{\text{CTEP1}}$	J101-A7	0: Color toner out.
	1	Color toner out signal 2	$\overline{\text{CTEP2}}$	J101-A8	0: Color toner out.
	2	Toner color signal 1	CT1	J101-A4	
	3	Toner color signal 2	CT2	J101-A5	
	4	Toner color signal 3	CT3	J101-A6	
	5	BD ready signal	BDRD	–	1: Ready.
	6	Laser scanner motor ready signal	LMRDY	J111-A3	1: Ready.
	7	Laser power controller ready signal	LPCRDY	J111-A4	1: Ready.
PB5	0	Black developing assembly release solenoid (SL4) drive signal	$\overline{\text{BDRSD}}$	J101-B13	1: SL4 ON
	1	Color toner supply solenoid (SL3) drive signal	$\overline{\text{CTSSD}}$	J101-B12	1: SL3 ON
	2	Color toner density detection lamp (LA851) ON signal	CTLON	J101-A2	0: LA851 ON
	3	Document identification LED ON signal	DLEDD1 DLEDD2 DLEDD3	J112-B6 J112-B4 J112-B2	1: LED OFF
	4	CD unit changer manual feed pick-up start command	$\overline{\text{MFON}}$	J105-10	1: Start
	5	CD unit changer manual feed shutter solenoid (SL905) drive signal	$\overline{\text{MFSSD}}$	J105-9	1: SL905 ON
	6	CD unit changer manual feeder roller solenoid (SL905) drive signal	$\overline{\text{MFRSD}}$	J105-8	1: SL904 ON
	7	CD unit reset signal	$\overline{\text{RESET}}$	J105-7	1: Reset

Table 3-26BF

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
PC5	0	Laser power controller signal	$\overline{\text{LPCC/D}}$	J111-B2	
	1	Laser power controller clock	LPCCLK	J111-A5	
	2	Not used.	–	–	
	3	Laser scanner motor (M11) drive signal	$\overline{\text{LMD}}$	J111-A2	1: M11 ON
	4	Laser OFF signal	LOFF	J113-2	1: Laser OFF.
	5	Laser power controller communication signal 0	LPCCMD0	J111-A8	
	6	Laser power controller communication signal 1	LPCCMD1	J111-A7	
	7	Laser power controller communication signal 2	LPCCMD2	J111-A6	
SPA	0	Lower feeder motor 2 (M6) drive signal	LF2A	J103-B12	Alternates between '1' and '0' while M6 rotates.
	1		LF2B	J103-B9	
	2		$\overline{\text{LF2A}}$	J103-B11	
	3		$\overline{\text{LF2B}}$	J103-B8	
	4	Lower feeder motor 1 (M5) drive signal	LF1A	J116-1	Alternates between '1' and '0' while M5 rotates.
	5		LF1B	J116-4	
	6		$\overline{\text{LF1A}}$	J116-2	
	7		$\overline{\text{LF1B}}$	J116-5	
SPB	0	Delivery feed motor (M7) drive signal	DFA	J109-B6	Alternates between '1' and '0' while M7 rotates.
	1		DFB	J109-B3	
	2		$\overline{\text{DFA}}$	J109-B5	
	3		$\overline{\text{DFB}}$	J109-B2	
	4	Lens motor (M3) drive signal	LNA	J112-A5	Alternates between '1' and '0' while M3 rotates.
			$\overline{\text{LNA}}$	J112-A4	
	5		LNB	J112-A3	
			$\overline{\text{LNB}}$	J112-A1	
	6	Cross-way registration motor (M4) drive signal	CRGA	J102-A12	Alternates between '1' and '0' while M4 rotates.
			$\overline{\text{CRGA}}$	J102-A11	
	7		CRGB	J102-A9	
			$\overline{\text{CRGB}}$	J102-A8	

Table 3-26BG

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(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
SPC	0	Lens motor (M3) power supply switch signal	LNSTB	J112-A2	1: 5V 0: 24V
	1	Cross-way motor (M4) power supply switch signal	CRGSTB	J102-A7 J102-A10	1: 5V 0: 24V
	2	Delivery feed motor (M7) normal/reverse rotation switch command	DFFW	–	Commands sent from main CPU (Q101)
	3	D.P request signal	DPRQ	–	
	4	Lower feeder unit drive command	DFON	–	
	5	Lower feeder unit outlet paper detection (Q14) signal	$\overline{\text{PDP5}}$	J103-B2	0: Paper present
	6	Lens home position (Q7) signal	LHP	J112-A11	1: Lens at home position.
	7	Cross-way registration paper edge detection (Q6) signal	PDP2	J102-B11	1: Paper present.
SPF	0	Not used.			
	1	Not used.			
	2	Not used.			
	3	Not used.			
	4	Not used.			
	5	Not used.			
	6	D.P busy signal	DPBS	–	
	7	Not used.			
MT6	0	Cassette 1 size detection switch	RTN0	J102-A6	'1' when switch is pressed.
	1		RTN1	J102-A5	
	2		RTN2	J102-A4	
	3		RTN3	J102-A3	
	4	AB/inch connect signal	RTN4	J118-1	0,0: AB (4R4E) 0,1: A (2R2E) 1,0: AB/inch (4R4E) 1,1: inch (4R3E)
	5		RTN5	J118-2	
	6	Counter operation 115/220/240V system connect signal	RTN6	J118-3	1: 115/220/240V system
	7	Not used.			

Table 3-26BH

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CANON NP-4835/4835i/4835S/4335 REV.0 DEC. 1991 PRINTED IN JAPAN (IMPRIME AU JAPON)

(NP-4835i)

Address	bit	Description	Signal	Pin	Remarks
MT7	0	Cassette 2 size detection switch	RTN0	J102-A6	'1' when switch is pressed.
	1		RTN1	J102-A5	
	2		RTN2	J102-A4	
	3		RTN3	J102-A3	
	4	Not used.			
	5	Not used.			
	6	CD unit changer connect signal	RTN6	J105-1	1: CD unit changer present.
	7	Service mode input push-switch (SW501)	RTN7	J113-1	1: SW501 ON
MT8	0	Cassette 3 size detection switch/Paper deck size detection switch	RTN0	J104-A6	'1' when switch is pressed; if paper deck, RTN3 is connect signal.
	1		RTN1	J104-A5	
	2		RTN2	J104-A4	
	3		RTN3	J104-A3	
	4	Cassette 3 connect signal	RTN4	J104-A12	1: Cassette 3 present.
	5	Not used.			
	6	Not used.			
	7	Not used.			
MT9	0	Cassette 4 size detection switch	RTN0	J104-A6	'1' when switch is pressed.
	1		RTN1	J104-A5	
	2		RTN2	J104-A4	
	3		RTN3	J104-A3	
	4	Cassette 4 connect signal	RTN4	J104-A12	1: Cassette 4 present.
	5	Not used.			
	6	Not used.			
	7	Not used.			
MTA		For factory adjustment.			

Table 3-26BI

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RDF-II

Address	bit	Description	Signal	Pin	Remarks
DF0	0	Registration unit paper sensor (S7) signal	$\overline{PDP3}$	J3-4	0: Paper present.
	1	Skew feed sensor (S8) signal	$\overline{PDP4}$	J3-6	0: Paper present
	2	Document alignment solenoid (SL4) drive signal	DSSLD	J11-7	0: SL4 ON
	3	Paper deflector solenoid (SL3) drive signal	FLSLD	J8-1	0: SL3 ON
	4	LED1 ON signal	–	–	0: LED1 ON.
	5	LED2 ON signal	–	–	0: LED2 ON.
	6	LED3 ON signal	–	–	1: LED3 ON.
	7	Document set indication (LED101, LED102) ON signal	OSD	J11-3	1: LED ON.
DF1	0	Pick-up motor (M1) drive signal	PUMD	J4-1	1: Motor ON.
	1	Feeder motor (M2) drive signal	FMD	J5-1	1: Motor ON
	2	Break (BK) drive signal	BKD	J6-1	0: Break ON.
	3	Belt motor rotation direction (counterclockwise) signal	BMCCW		
	4	Belt motor rotation direction (clockwise) signal	BMCW		
	5	Stack separation arm motor (M4) drive signal	RSMP	J11-4	0: Motor ON.
	6	Stack pressure plate solenoid (SL2) drive signal	$\overline{WGTSLD}$	J8-4	0: SL2 ON.
	7	Paper stopper plate solenoid (SL1) drive signal	STPSLD	J8-1	0: SL1 ON
DF2	0	For communication with external equipment.	TXD	J13-7	
	1	For communication with external equipment.	RXD	J13-5	
	2	For Microprocessor	–	–	
	3	Feeder motor clock sensor (S5) signal.	FMCLK	J10-8	
	4	Not used.	–	–	
	5	Belt motor clock sensor (S4) signal	BMCLK	J10-5	
	6	For communication with external equipment.	REQ	J16-1	
	7	For communication with external equipment.	ACK	J16-3	

Table 3-27A

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Address	bit	Description	Signal	Pin	Remarks
DF3	0	Stack separation arm position sensor (S11) signal	LDD	J11-6	1: Paper present
	1	Pick-up roller home position sensor (S3) signal	PUSP	J10-2	1: Pick-up roller at home position.
	2	Pick-up unit paper sensor (S1) signal	PDP1	J3-2	1: paper present.
	3	Delivery unit paper sensor (S2) signal	PDP2	J3-4	1: Paper present.
	4	Upper cover switch (MS4, MS5) signal	UPCC2	J18-1	0: When upper cover is closed.
			UPCC1	J2-3	
	5	RDF switch (MS3) signal	RFC	J2-1	0: When RF is closed.
	6	Push-switch signal	–	–	0: Push-switch ON.
	7	For microprocessor	–	–	
DF4	0	DIP switch setting	–	–	
	1	DIP switch setting	–	–	
	2	DIP switch setting	–	–	
	3	DIP switch setting	–	–	
	4	DIP switch setting	–	–	
	5	For communication with external equipment.	–	J15-3	0: Connected.
	6	For microprocessor	–	–	
	7	Not used.	–	–	

Table 3-27B

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D-ADF

Address	bit	Description	Signal	Pin	Remarks
DF0	0	Cover open-closed switch (MS2)/D-ADF open-closed switch (MS3) signal	DFC	J3-1	1: Cover or D-ADF open.
	1	Cover open-closed switch (MS2) signal	UPCC	J2-1	1: Cover open.
	2	Tray open-closed switch (MS1) signal	$\overline{TRC}$	J11-4	1: Tray open.
	3	Push-switch (SW2) signal			0: SW2 ON
	4	Pick-up motor clock sensor (S3) signal	PFCLK	J8-4	Alternates between '1' and '0' while pick-up motor rotates.
	5	Pick-up sensor (S5) signal	PDP1	J9-2	1: Paper present.
	6	Delivery sensor (S1) signal	PDP2	J10-2	1: Paper present.
	7	IPC error signal	$\overline{CTS1}$*	–	Resets IPC when '0'.
DF1	0	Document set LED ON signal	$\overline{DSD}$	J8-2	1: LED ON.
	1	Pick-up motor (M2) drive signal	PUMD	J13-1	1: M2 ON
	2	Delivery motor (M3) drive signal	DMD	J14-1	1: M3 ON
	3	Belt motor (M1) counterclockwise rotation signal	$\overline{BMCCW}$	–	0: M1 counterclockwise rotation.
	4	Belt motor (M1) clockwise rotation signal	$\overline{BMCW}$	–	0: M1 clockwise rotation
	5	Belt break (BK) drive signal	BKD	J12-1	1: BK ON
	6	Paper hold plate solenoid (SL1) drive signal	$\overline{WGTSLD}$	J11-2	0: SL1 ON
	7	Stopper plate solenoid (SL2) drive signal	STPSLD	J12-1	1: SL2 ON
DF2	0	LED1 ON signal	–	–	0: LED1 ON.
	1	LED2 ON signal	–	–	0: LED2 ON.
	2	LED3 ON signal	–	–	0: LED3 ON.
	3	Delivery motor clock sensor (S2) signal	DMCLK	J10-5	Alternates between '1' and '0' while delivery motor rotates.
	4	For factory adjustment.			
	5	For factory adjustment.			
	6	Editor connect signal	$\overline{ECNT}$	J6-3	0: Editor present.
	7	Not used.			
DF3		Address/Data bus			
DF4		Address bus			

Table 3-28

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Sorter VIII

Address	bit	Description	Signal	Pin	Remarks
ST0	0	Lead cam home posotion (PI1) signal	LCHP	J4-2	1: Lead cam at home position.
	1	Bin non-sort position (PI2) signal	BNSP	J4-5	1: Bin at non-sort position.
	2	Push-switch (SW2)	–	–	0: SW2 ON
	3	Push-switch (SW3)	–	–	0: SW3 ON
	4	DIP switch (SW1-1)	–	–	0: SW1-1 ON
	5	DIP switch (SW1-2)	–	–	0: SW1-2 ON
	6	In-position switch (MS1)	SIP	J4-7	0: MS1 ON
	7	Paper detection (PI3) signal	PDP	J5-2	0: Paper present.
ST1	0	Bin motor down signal	BMDWN	–	1: Bin down.
	1	Bin motor up signal	BMUP	–	1: Bin up.
	2	Paper deflector solenoid (SL1) drive signal	PDSD	J6-2	1: SL1 ON
ST1	3	Not used.			
	4	LED1 ON signal	–	–	0: LED1 ON.
	5	Not used.			
	6	Not used.			
	7	Not used.			
ST2	0	For factory checks.		J2-7	
	1			J2-5	
	2			J2-3	
	3			J2-1	
	4	Not used.			
	5	Not used.			
	6	Feed motor (M2) drive signal	PFMD	J5-4	1: M2 ON
	7	IPC error signal			
ST3		Address/Data bus			
ST4		Address bus			

Table 3-29

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CANON NP-4835/4835i/4835S/4335 REV.0 SEPT. 1988 PRINTED IN JAPAN (IMPRIME AU JAPON)

Stapler Sorter

Address	bit	Description	Signal	Pin	Remarks
ST0	0	Stapler unit set signal	$\overline{\text{SPUSET}}$	J11-1	0: Stapler unit connected.
	1	Stapling home position sensor (MS8) signal	SPLHP	J11-3	1: At home position.
	2	Stapler unit swing sensor (MS9) signal	$\overline{\text{SWGSET}}$	J8-5	0: At stapling position or home position.
	3	Stapler cover open/closed sensor (MS5) signal	SPLOPN	J10-3	1: Cover open.
	4	Staple guide bar home position sensor (PI7) signal	SGBHP	J12-6	1: At home position.
	5	Lead cam home position sensor (PI2) signal	LCHP	J14-5	1: At home position
	6	Bin shift motor (M2) up signal	$\overline{\text{BMUP}}$	–	0: M2 up rotation.
	7	Bin shift motor (M2) down signal	$\overline{\text{BMDOWN}}$	–	0: M2 down rotation.
ST1	0	Staple guide bar swing motor (M3) drive pulse A	$\overline{\text{PMA}}$	J13-3 J13-5	Alternates between '1' and '0' while M3 rotates.
	1	Staple guide bar swing motor (M3) drive pulse B	$\overline{\text{PMB}}$	J13-4 J13-6	
	2	Staple guide bar swing motor (M3) drive power supply	$\overline{\text{PMON}}$	J13-1 J13-2	0: Drive power supply ON.
	3	Staple motor (M4) normal rotation signal	$\overline{\text{SPLMFW}}$	–	0: M4 rotates in normal direction.
	4	Staple motor (M4) reverse rotation signal	$\overline{\text{SPLMRV}}$	–	0: M4 rotates in reverse direction.
	5	Switch-back path solenoid (SL1) drive signal	$\overline{\text{SBPSLD}}$	J7-10	0:SL1 ON
	6	Paper path switch solenoid (SL2) drive signal	$\overline{\text{PSLD}}$	J7-8	0: SL2 ON
	7	Paper hold solenoid (SL3) drive signal	$\overline{\text{PHSLD}}$	J5-2	0: SL3 ON

Table 3-30A

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Staple Sorter

Address	bit	Description	Signal	Pin	Remarks
ST2	0	Not used.			
	1	Staple ready indicator ON signal	SPLOK	J8-4	0: ON.
	2	Bin paper sensor LED ON signal	LON	J12-2	1: ON.
	3	Not used.			
	4	Stapler unit swing motor (M5) drive signal	SWGMD	J9-1	1: M5 ON
	5	Feeder motor clock sensor (PI6) signal	FMCLK	J5-4	Alternates between '1' and '0'.
	6	Feeder motor (M1) drive signal	FMD	J6-1	1: M1 ON
	7	Feeder motor (M1) brake signal.	FMBK	J6-2	1: M1 braked.
ST3	0	Stapling position paper sensor (PI8) signal	SPD	J8-8	1: Paper present.
	1				
	2	Manual staple key signal	MNSPL	J8-1	0: Key ON.
	3	Non-sort path paper sensor (PI4) signal	$\overline{\text{NSPEXT}}$	J7-5	0: Paper present.
	4	Sort path paper sensor (PI5) signal	$\overline{\text{SPEXT}}$	J7-2	0: Paper present.
	5	Bin unit home position sensor (PI3) signal	BHP	J14-2	1: At home position.
	6	Joint sensor (MS1) signal	$\overline{\text{SOP}}$	J2-2	0: MS1 ON
	7	Stapling position set sensor (MS6) signal	SPLSET	J10-6	1: At stapling position.

Table 3-308

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Auto Stapler Folder

Address	bit	Description	Signal	Pin	Remarks
ST0	0	Staple guide plate drive motor (M7) drive pulse	PMA	J7-11	Alternately '1' and '0' while M7 is rotating.
	1		$\overline{PMA}$	J7-12	
	2		PMB	J7-13	
	3		$\overline{PMB}$	J7-14	
	4	Staple guide plate drive motor (M7) drive power	PMON	J7-9	1: Drive power ON.
	5	No. 2 paper path drive solenoid (SL3) drive signal	$\overline{P2SLD}$	J4-2	0: SL3 ON.
	6	Paper deflector 1 solenoid (SL1) drive signal	$\overline{D1SLD}$	J4-4	0: SL1 ON.
	7	Paper deflector 2 solenoid (SL2) drive signal	$\overline{D2SLD}$	J4-6	0: SL2 ON.
ST1	0	Feed motor (M1) drive signal	FMD	J7-3	1: M1 rotates.
	1	No. 1 delivery motor (M4) drive signal	DM1D	J7-1	1: M4 rotates.
	2	No. 2 delivery motor (M2) normal rotation signal	$\overline{DM2FW}$	–	1: M2 rotates in normal direction.
	3	No. 2 delivery motor (M2) reverse rotation signal	$\overline{DM2RW}$	–	1: M2 rotates in reverse direction.
	4	Staple motor (M6) normal rotation signal	$\overline{SPLMFW}$	–	0: M6 rotates in normal.
	5	Staple motor (M6) reverse rotation signal	$\overline{SPLMRV}$	–	0: M6 rotates in reverse.
	6	Shift motor (M8) drive signal	SFMD	J5-5	1: M8 rotates.
	7	Swing unit drive motor (M5) drive signal	SWMD	J7-5	1: M5 rotates.
ST2	0	No. 2 delivery motor clock sensor (PI2) signal	DM2CLK	J9-B13	Alternately '1' and '0' while M2 is rotating.
	1	Stack motor clock sensor (PI10) signal	STMCLK	J6-2	Alternately '1' and '0' while M3 is rotating.
	2	Staple guide plate home position sensor (PI1) signal	SGHP	J19-A13	1: When at home position.
	3	No. 1 delivery motor clock sensor (PI6) signal	DMICLK	J9-B7	Alternately '1' and '0' while M1 is rotating.
	4	No. 1 paper path sensor (PI9) signal	$\overline{PP1D}$	J9-A10	0: Paper present.
	5	No. 2 paper path sensor (PI8) signal	$\overline{PP2D}$	J9-B10	0: Paper present.
	6	Swing unit home position sensor (PI7) signal	$\overline{SWHP}$	J9-A4	0: Sing unit is at topmost or bottom most.
	7	Sub tray solenoid (SL4) drive signal	$\overline{SSLD}$	J5-4	0: SL4 ON.

Table 3-30-1A

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Auto Stapler Folder

Address	bit	Description	Signal	Pin	Remarks
ST3	0	Stack tray upper limit sensor (MS6) signal	$\overline{VLS}$	J4-10	1: Stack tray is at topmost.
	1	Stack tray lower limit sensor (MS7) signal	$\overline{LLS}$	J4-12	1: Stack tray is at bottommost.
	2	Stack tray shift width sensor (MS8) signal	$\overline{SFTW}$	J6-10	0: Left/right shift is over.
	3	Stack tray position sensor (PI11) signal	$\overline{LPD}$	J6-5	0: Stack tray is at left.
	4	DIP switch (SW1-1)	–		For factory use.
	5	DIP switch (SW1-2)	–		0: ON
	6	DIP switch (SW1-3)	–		0: ON
	7	Manual staple key (SW10) signal	MNSPL	J9-B4	0: Key is ON.
ST4	0	Fold feed motor (M1) drive signal	$\overline{PFMD}$	J10-6	1: M1 rotates.
	1	Skew correction solenoid (SL8) drive signal	$\overline{SRSD}$	J11-8	1: SL8 ON.
	2	Pressure solenoid (SL3) drive signal	$\overline{PSD}$	J11-5	1: SL3 ON.
	3	B4 Z fold solenoid (SL4) drive signal	$\overline{ZMSD}$	J11-4	1: SL4 ON.
	4	A3 Z fold solenoid (SL5) drive signal	$\overline{ZLSD}$	J11-3	1: SL5 ON.
	5	B4 half fold solenoid (SL6) drive signal	$\overline{HMSD}$	J11-2	1: SL6 ON.
	6	Intermediary deflector solenoid (SL2) drive signal	$\overline{PMSD}$	J11-6	1: SL2 ON.
	7	B4 Z fold No. 2 solenoid (SL7) drive signal	$\overline{ZMSSD}$	J11-1	1: SL7 ON.
ST5	0	Paper fold unit connection signal	$\overline{PFSET}$	J10-3	0: Paper fold unit is present.
	1	Fold paper detection sensor (PT3) signal	$\overline{PD}$	J10-3	0: Paper is present.
	2	Stapling home position sensor (MS4) signal	SPLHP	J8-3	0: Stapler unit is present.
	3	Stapler unit connection signal	$\overline{SPLSET}$	J8-1	0: Stapler unit is present.
	4	Not used.			
	5	Not used.			
	6	Stack motor (M3) descent signal	$\overline{STMDWN}$		1: M3 rotates in reverse direction
	7	Stack motor (M3) descent signal	$\overline{STMUP}$		1: M3 rotates in normal direction.

Table 3-30-1B

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CANON NP-4835/4835i/4835S/4335 REV.0 JUNE 1989 PRINTED IN JAPAN (IMPRIME AU JAPON)

Auto Stapler Folder

Address	bit	Description	Signal	Pin	Remarks
ST6	0	Not used.			
	1	Not used.			
	2	Not used.			
	3	Swing unit open/closed sensor (MS3) signal	SWDWN	J2-4	0: Swing unit is closed.
	4	Staple tray paper sensor (PI3) signal	SPD	J9-A16	1: Paper is present.
	5	Stack level sensor (PI4) signal	STL	J9-B16	1: Paper in excess on stack tray.
	6	Stack tray paper sensor (PI12) signal	STD	J6-8	1: Paper is present.
	7	Staple sensor (PT1) signal	HKEMP	J8-6	0: Staple is present.
ST7	0	Joint sensor (MS2) signal	$\overline{\text{SOP}}$	J2-2	0: Not connected to copying machine.
	1	Stapler cover open/closed sensor (MS5) signal	$\overline{\text{SPLOPN}}$	J4-8	0: Stapler cover is open.
	2	Paper fold unit power detection signal	PFPW	J10-5	1: Power is present.
	3	Lower left door open/closed sensor (MS2) signal	LLOPN	J12-1	0: Lower left door is open.
	4	Not used.			
	5	Not used.			
	6	Not used.			
	7	Not used.			

Table 3-30-1C

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CD Unit Changer (NP-4835/4835i only)

Address	bit	Description	Signal	Pin	Remarks
AC0	0	Horizontal move motor (M902) drive signal	$\overline{\text{HMD}}$	J909-5	0: M902 ON
	1	Horizontal move motor (M902) move-out signal	$\overline{\text{HMFO}}$	J909-6	0: M902 rotates in move-out direction.
	2	Not used.			
	3	Not used.			
	4	CD unit changer in operation	BUSY	J907-5	
	5	Not used.			
	6	CD unit move release detection (Q965) signal	FRD	J905-6	1: Released.
	7	CD unit claw release detection (Q966/Q967) signal	$\overline{\text{CLRD}}$	J905-9	0: Both front and rear released.
AC1	0	Manual feed door detection (MS902) signal	MFD0	J903-5	0: Manual feed door open.
	1	CD unit select switch (SW902) signal	$\overline{\text{SELECT}}$	J906-4	0: SW902 ON
	2	CD unit move-out switch (SW901) signal	$\overline{\text{EJECT}}$	J906-3	0: SW901 ON
	3 4 5 6 7	For factory adjustment.		J910-1 J910-2 J910-3 J910-4 J910-5	
AC2	0	Communication with copier.	TXD	J907-8	
	1		RXD	J907-7	
	2	Manual feed pick-up start signal	$\overline{\text{MFON}}$	J907-1	0: Manual feed pick-up start.
	3	Horizontal move motor (M902) clock	HMCLK	J909-9	Alternates between '1' and '0' while in rotation.
	4	Vertical move motor (M901) down signal	VMDWN	–	1: M901 rotates in descent direction.
	5	Vertical move motor (M901) up signal	VMUP	–	1: M901 rotates in ascent direction.
	6	Vertical move motor (M901) brake signal	VMBK	–	1: M901 braked.
	7	CD unit release detection (Q968) signal	$\overline{\text{CRD}}$	J905-11	0: Released.

Table 3-31A

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CANON NP-4835/4835i/4835S/4335 REV.1 DEC. 1991 PRINTED IN JAPAN (IMPRIME AU JAPON)

CD Unit Changer (NP-4835/4835i only)

Address	bit	Description	Signal	Pin	Remarks
AC3	0	CD unit vertical move home position detection (Q963) signal	VHP	J904-B13	1: At home position.
	1	CD unit horizontal move home position detection (Q961) signal	HHP	J904-B10	0: At home position.
	2	CD unit horizontal move detection right (Q962) signal	HRP	J904-A13	0: CD unit detected.
	3	CD unit horizontal move detection left (Q964) signal	HLP	J904-A16	0: CD unit detected.
	4	Color toner signal 1	CT1	J908-3	See Table 3-8.
	5	Color toner signal 2	CT2	J908-4	
	6	Color toner signal 3	CT3	J908-5	
	7	CD unit door detection (MS901) signal	–	–	'1' when MS901 OFF, and 24V DC cut.
AC4	0	Vertical motor lock release solenoid (SL901) drive signal	VMLSD	J904-A2	0: SL901 ON
	1	CD unit move solenoid (SL906) drive signal	FSD	J904-B2	0: SL906 ON
	2	CD unit move-out clutch (CL902) drive signal	FOCD	J904-B16	0: CL902 ON
	3	CD unit move release solenoid (SL907) drive signal	FRSD	J904-A6	0: SL907 ON
	4	CD unit claw release solenoid (SL902) drive signal	CRSD	J904-A4	0: SL902 ON
	5	Manual feed switch solenoid (SL903) drive signal	MFSD	J904-B4	0: SL903 ON
	6	CD unit move-in clutch (CL901) drive signal	FICD	J904-A8	0: CL901 ON
	7	Not used.			
AC5	0	CD unit changer control panel LED ON signal	LED-DRV	J906-12	0: LED ON.
	1		LED-BR	J906-11	
	2		LED-G	J906-10	
	3		LED-BL	J906-9	
	4		LED-R	J906-8	
	5		LED-L	J906-7	
	6		LED-M	J906-6	
	7		LED-U	J906-5	

Table 3-31B

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F. Adjustment Mode ([*] [3] [*])

Press the [↑] or [↓] key to select the screen.

- Use the number keys to enter settings, or use the ENLARGE/REDUCE key to increase/decrease the settings.
- Use the ID key to reverse +/–.
- Enter settings with the [#] key; note that values larger than the specified range of settings will not be accepted.

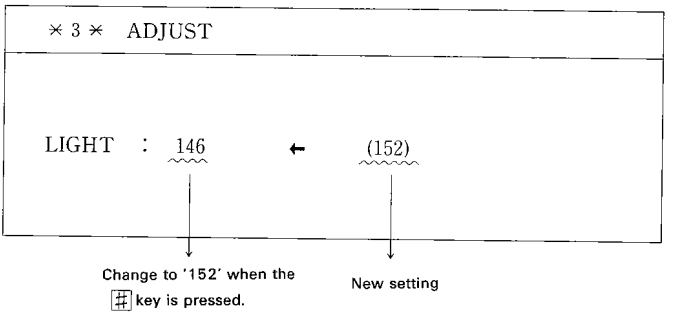

Figure 3-165

* NP-4835/4835i only.

Item	Description	Settings	Remarks
LIGHT	Intensity of copy density 5 (effective for manual and AE)	0 ~ 255	When the setting is increased, the copy density will decrease. (unit: 0.14V)
AE	AE	0 ~ 255	When the setting is increased, the density of newspaper copies will decrease.
RGST	Leading edge blank area (registration roller ON timing)	0 ~ 255	When the setting is increased., the registration ON timing will be delayed the leading edge blank area will decrease. (unit: 0.448 mm)
LEBA	Leading edge non-reproduced area (laser/blank exposure lamp (LED) OFF timing)	0 ~ 255	When the setting is increased, the laser/blank exposure lamp (LED) OFF timing will be delayed and the leading edge non-reproduced area will increase. **Note:** Changing the setting changes the location of the area. (unit: 0.25 mm)**
SBA*	Side non-reproduced area (laser ON/OFF timing)	0 ~ 255	When the setting is increased, the side non-image area will decrease at the front and increase at the rear. (unit: 0.25 mm)
SCBK	Scanner stop position (scanner brake ON timing)	0 ~ 50	When the setting is increased, the stop position will move to the left. (unit: 2 ms)

** For NP-4835S/4335, 0.20 mm.

Table 3-32A

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CANON NP-4835/4835i/4835S/4335 REV.2 DEC. 1991 PRINTED IN JAPAN (IMPRIME AU JAPON)

* NP-4835 only.

Item	Description	Setting	Remarks
CHRTR *	Character thickness	0 ~ 7	When the setting is increased, the characters in the add-on mode will be thicker.
SCREN *	Shading dot size	0 ~ 7	When the setting is increased, the shading dots in the screen mode will be larger.
SHADE	Highlight shading dot size (NP-4835i only)	0 ~ 31	When the setting is increased, the shading dots in the highlight mode will be larger.
GRI_N	Grid bias	-800 ~ 0	When the setting is increased (closer to 0), the bias will decrease (closer to 0) and the copy density will decrease. (unit: 1V)
GRI_P	Grid bias (photo mode)		
DCB_B	Developing bias (DC component) for black copy operation	-500 ~ 0	When the setting is increased (closer to 0), the bias will decrease (closer to 0) and the copy density will increase. (unit: 1V)
DCB-C *	Developing bias (DC component) for color copy operation		
TRN_1	Transfer current	-250 ~ 0	When the setting is increased (closer to 0), the current will decrease. (unit: 1 μA)
TRN_2	Transfer current (2nd face of overlay/two-page copies)		
SEP_1	Separation current	-100 ~ 150	When the setting is increased (higher than 0), the current will increase. (unit: 1 μA)
SEP_2	Separation current (2nd face of overlay/two-page copies)		
BK_ER *	Book frame erasing margin	1 ~ 100	When the setting is increased, the erasing margin will increase. (unit: 1 mm)
AD_P *	Standard add-on** position	1 ~ 50	When the setting is increased, the position will move to the center. (Unit: 0.5 mm)
AD_A *	Standard add-on** erasing margin	1 ~50	When the setting is increased, the erasing margin will increase. (unit: 1 mm)
L_PWR *	Laser power (for factory adjustment)	0 ~ 63	When the setting is increased, the laser power will increase.
S_BLU *	Developing bias (DC component) difference for each color copy mode	-50 ~ 50	Sets the difference among colors in relation to DCB_C (red).
S_GRN *			
S_BRW *			

** Date, headline and numbering.

Table 3-32B

G. Operation/Check Mode (* 4 *)

- Press the key to select the screen.
- Press the CASSETTE SELECT key; the copier performs the following. Another press stops the operation. Be sure to perform the operation under each item while the copier is in its standby condition.

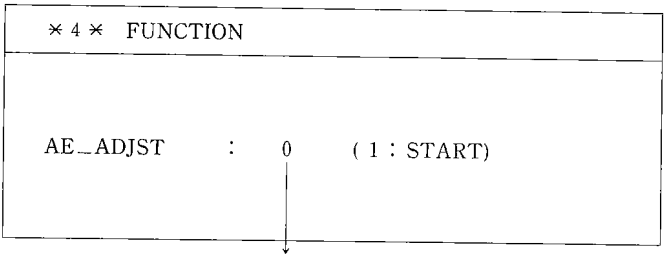

Figure 3-166

* NP-4835/4835i only.
** NP-4835S/4335 only.

Item	Description	Remarks
AE_ADJST	AE scan intensity adjustment	Upon setting the intensity, changes to '0' automatically and stops. See Service Handbook.
SZ1_ADJ	Document size detection adjustment 1	Upon completing the adjustment, changes to '0' automatically and stops. See Service Handbook.
SA2_ADJ	Document size detection adjustment 2	
DEV_REL *	Black developing assembly release/CD unit engagement	Upon release, changes to '0' automatically and stops.
CD_ROT *	CD unit installation idle rotation mode	The rotation will stop for 3 min automatically. Limit the operation for installation only.
LAMP	Scanning lamp ON check	If kept ON for 40 sec or more, the lamp abnormal ON detection circuit will be activated, and the power will be turned OFF.
H_MOTOR	Hopper motor operation check	If operated for a long time, toner will overflow the black developing assembly. Take care.
LED_CHK	Control panel LED ON check	Flashes.
LSR_MRR *	Laser and laser scanner operation check	Stop the operation within 10 sec.
LASER *	Laser power adjustment	For factory adjustment only; do not use it in the field.
L_TEST1 *	Test pattern 1 output	See Figure 3-167.
BLANK **	Checking the lighting of the blank exposure lamp (LED array)	Always remove the drum unit first.

Table 3-33A

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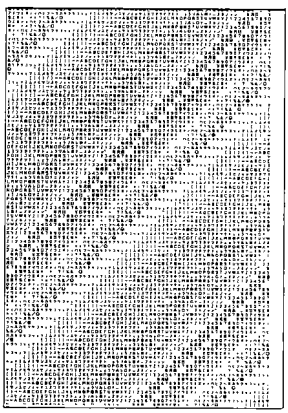
* NP-4835/4835i only.

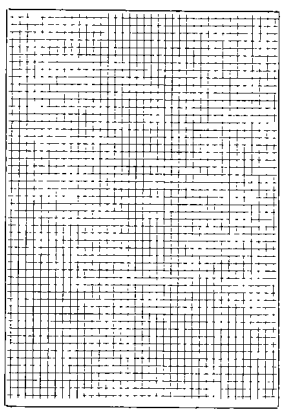
Item	Description	Remarks
L_TEST2 *	Test pattern 2 output	See Figure 3-168.
ADJ_PRNT *	Adjustment mode value output	See Figure 3-169.
ERROR	E000, E001, E002, E003 Waste toner full clear	
RAM_INIT	RAM data initialize	Initializes RAM data on DC controller; limit the operation for replacement of the DC controller, and be sure to enter values for the adjustment mode (* 3 * , and others according to the label.)

Table 3-33B



Character set

Figure 3-167



Square grid

Figure 3-168

Adjustment mode print out

Figure 3-169

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H. User Option Mode (* 5 *)

- Press the ↓ or ↑ key to select the screen.
- Press the CASSETTE SELECT key to change the settings.
- Use the number keys or ENLARGE/REDUCE keys to increase/decrease the settings.

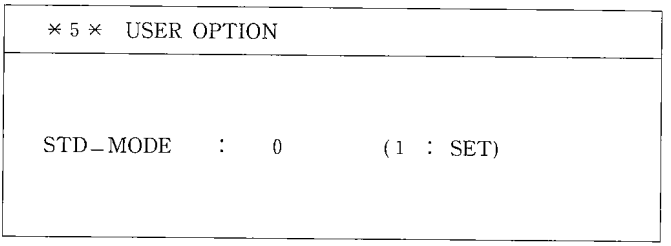

Figure 3-170

Item	Function	Description	Remarks
SET_MODE	Sets the standard mode.	Enables setting of modes to be selected when the reset key is pressed.	Set the desired modes select this item, and press the CASSETTE SELECT key.
AUTO_CST	Activates or de-activates the auto cassette change function.	If activated, the copier automatically changes cassettes, i.e., if the cassette selected runs out of paper, a cassette with paper of the same size will be selected to continue the copy operation. 1: Enables de-activation of the auto cassette change function. 0: Activates the auto cassette change function.	
AUTO_NS	Selects the sort function for single documents.	Enables sorting/grouping of single documents when a DF is in use. 0: SORT/GROUP de-activated. 1: SORT/GROUP activated.	
BIND	Selects image shift A/B	Provides a binding margin on the second face of copies for 'one-sided document to two-sided copy' and 'two-sided document to one-sided copy." 0 (A): Binding margin on 2nd face activated. 1 (B): Binding margin on 2nd face de-activated.	

Table 3-34A

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CANON NP-4835/4835i/4835S/4335 REV.0 SEPT. 1988 PRINTED IN JAPAN (IMPRIME AU JAPON)

Item	Function	Description	Remarks
MODE_INT	Initializes standard mode	Initializes the modes set under STD_MODE. Press the CASSETTE SELECT key to start the operation.	Standard Mode Defaults: • DIRECT • Auto paper size selection • AE • Single copy • Black copy
SHUT_OFF	Activates or de-activates the auto shut-off function.	De-activates the auto shut-off function (2 hr.). 0: Auto shut-off function activated. 1: Auto shut-off function de-activated.	
SIZE_DET	Activates or de-activates the size detection function.	De-activates the size detection function of the copier. 0: Size detection activated. 1: Size detection de-activated.	
C_DENS (NP-4835/ 4835i only)	Activates or de-activates the color density adjustment mode.	De-activates the color density adjustment mode (see Note). 0: Color density adjustment mode activated. 1: Color density adjustment mode de-activated.	See note.
US1 US2 UL1 UL2	Registers the size of the universal cassette.	Registers the size of the paper to be set in the universal cassette. Upon registration, the auto reproduction ratio selection can be made use of.	Length: Paper feed direction Width: Front-to-Rear direction
DATE TIME (NP-4835S /4335/4835i only)	ON/OFF selection of date and time display.	0: Date and time are displayed on the control panel. 1: Date and time are not displayed on the control panel.	
DATE_SEL (NP-4835S /4335/4835i only)	Selection of mode of date display.	The date can be displayed in the following modes: Example: for April 26 0: 4/26 1: 26/4 2: APR/26	Press the "0", "1" or "2" key; then press the [#] key.

Table 3-34B

Position of Size Detection Actuators

	Left side			Right side
US1	1	0	0	0
US2	1	0	0	1
UL1	1	0	1	0
UL2	0	0	1	0

Table 3-35

Note:
In the NP-4835/4835i, the color density adjustment mode is used to correct the density of copies made in continuous operation of documents with a low image ratio; e.g., color copies in the stamp mode, etc. This "low density" problem, however, is rare under low temperature/humidity condition; de-activate the mode if color toner conservation is a consideration.

I. Counter Mode (* 6 *)

- Press the or key to select the screen.
- To clear the count, press the clear key (C/S) while pressing the service mode switch (Figure 3-158).

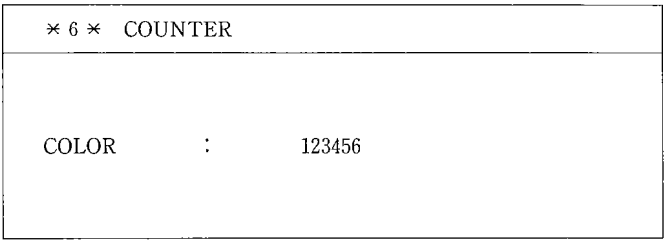

Figure 3-171

* NP-4835/4835i only.

	Item	Description	Maximum number of digits
*	COLOR	Color copy count	999999 (returns to 000000 when reached)
*	RED	Red copy count	
*	BLUE	Blue copy count	
*	GREEN	Green copy count	
*	BROWN	Brown copy count	
	WEB	Cleaning belt drive solenoid ON count (see Note)	
	CNTR1	Manual feed pick-up count	
	CNTR2	Cassette 1 pick-up count	
	CNTR3	Cassette 2 pick-up count	
	CNTR4	Cassette 3 pick-up count	
	CNTR5	Cassette 4 pick-up count	
	CNTR6	Paper deck pick-up count	
	CNTR7	Two-sided copy pick-up count (from lower feeder unit)	
	CNTR8	Overlay copy pick-up count (from lower feeder unit)	
	CNTR9	DF document pick-up count	

Note:
'CLEANING BELT OUT' will be indicated on the message display at the count of 300,000.

Table 3-36

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X. SELF-DIAGNOSIS

The microprocessor in the DC controller of the copier is equipped with a mechanism which checks the condition of the copier (sensors in particular). The checks are made as necessary and, if a problem is identified, error codes are indicated on the message display of the control panel.

The error codes and the particulars of the codes are as follows:

Code	Possible cause	Timing
E000	• Thermistor (TH1; contact poor or line broken) • Heater (H1; broken line) • 0 Thermoswitch (H1; line broken) • SSR (failure) • DC controller PCB (failure)	The output of TH1 fails to reach 70°C within two minutes after the copier is turned ON. (See Notes 1 and 2.)
E001	• Thermistor (TH1; shorted) • SSR (failure) • DC controller PCB (failure)	The output of TH1 exceeds 230°C. (See Notes 1 and 2.)
E002	• Thermistor (TH1; contact poor or line broken) • Heater (H1; line broken) • Thermal switch (TS1; activated) • SSR (failure) • DC controller PCB (failure)	The output of TH1 fails to reach 190°C within five minutes after it reaches 70°C. (See Notes 1 and 2.)
E003		The output of TH1 falls below 70°C after the warm-up. (See Notes 1 and 2.)
E010	• Main motor (M1; failure) • Motor drive PCB (failure) • DC controller PCB (failure)	No clock pulse is is present for one second after the main motor drive signal is generated. (NP-4835)
		PLL lock signal not input within 0.5 seconds of the generation of main motor drive signals. (NP-4835S/4335)
E030	• Counter (CNT1; line broken) • DC controller PCB (failure)	Checks are made immediately before the counter is turned ON and OFF. (normal, if counter drive signal is '0' at time of counter ON; normal, if counter drive signal is '1' at time of counter OFF)
E080	• CD unit controller PCB (failure) • DC controller PCB (failure) • Wiring (failure) • 5V DC power supply to CD unit changer controller PCB (failure)	A problem is found in communication between the CD unit changer controller PCB and DC controller PCB.
E081	• Vertical move motor (M901; failure) • CD unit changer controller PCB (failure) • Vertical motor lock release solenoid (SL901; failure)	A single pulse of the encoder output takes 4 seconds or more while the motor is driven.

Table 3-37A

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Code	Possible cause	Timing
E082	• Horizontal move motor (M902; failure) • Motor driver PCB (failure) • CD unit horizontal home position detection (Q961; failure) • CD unit changer controller PCB (failure) • CD unit (poor movement) • CD unit release detection (Q968; failure)	• A single pulse of the encoder output takes two seconds or more while the motor is driven. • The CD unit horizontal home position detection (Q961) is not turned ON or OFF within the specified time. • The CD unit fails to reach the copier connector within the specified time when it is moved into the copier.
E083	• CD unit horizontal move detection right (Q962; failure) • CD unit changer controller PCB (failure)	The sensor is turned ON while the compartment is moving in vertical direction.
E084	• CD unit horizontal move detection left (Q964; failure) • CD unit changer controller PCB (failure)	The sensor is turned ON while the compartment is moving in vertical direction.
E085	• CD unit move release detection (Q965; failure) • CD unit move release solenoid (SL907; failure) • Gear release spring (failure)	• The sensor is turned ON while the compartment is moving in vertical direction. • The sensor does not detect gear release even when the CD unit is moved left and right 20 times.
E086	• CD unit claw release detection (Q966, Q967; failure) • CD unit claw release solenoid (SL902; failure)	The sensor does not detect claw engagement even after the CD unit is moved left and right 20 times.
E089	• CD unit changer (operation failure)	The CD unit changer fails to complete its operation within one minute after it starts operation.
E 100	• Laser unit (failure) • BD mirror (failure) • Optical fiber (failure) • Laser power controller PCB (failure) • DC controller PCB (failure)	• The BD signal is not generated within two seconds after the laser is turned ON. • The BD signal is out of synchronization.
E 110	• Laser scanner motor (M11; failure) • Laser power controller PCB (failure) • DC controller PCB (failure)	• The laser scanner motor fails to reach the specified speed within two seconds after the COPY START key is pressed. • The laser scanner motor deviates from the specified speed after it reaches the speed.
E 140	• Laser unit (failure) • Laser power controller PCB (failure) • DC controller PB (failure)	The laser power fails to reach the specified value within 0.4 second after the laser is turned ON.

Table 3-37B

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Code	Possible cause	Timing
The keys on the control panel are locked. (E202; Note 3)	• Scanner home position sensor (Q8; failure) • Scanner motor (M2; failure) • Motor driver PCB (failure) • DC controller PCB (failure)	The scanner fails to return to the home position within five seconds after it starts to move.
E203	• Scanner motor (M2; failure) • Scanner wire (failure) • Motor driver PCB (failure) • DC controller PCB (failure)	No clock pulse is sent from the scanner motor for one second when the scanner motor drive signal is generated. (NP-4835)
		PLL lock signal not input within 0.4 seconds of generation of scanner motor drive signals. (NP-4835/4335)
The keys on the control panel are locked. (E204; Note 3)	• Scanner at document edge sensor (Q9; failure) • Motor driver PCB (failure) • DC controller PCB (failure)	The scanner at document edge signal is not generated within 0.5 second after the scanner starts to move forward.
E210	• Lens home position sensor ((Q7; failure) • Lens motor (M3; failure) • Lens wire (failure) • DC controller PCB (failure)	• The lens home position signal (LHP) is not generated within the specified time after the copier is turned ON. • The Lens home position signal (LHP) is generated for more than the specified time.
E240	• DC controller PCB (failure)	A problem is found in communication between the main CPU (Q101) and sub CPU (Q102).
E401	• Pick-up motor rotation failure.	See the RF-II OR DADF SERVICE MANUAL.
E402	• Belt motor rotation failure.	See the RF-II OR DADF SERVICE MANUAL.
E403	• Feed motor rotation failure.	See the RF-II SERVICE MANUAL.
E404	• Delivery motor rotation failure.	See the DADF SERVICE MANUAL.
E411	• Document sensor failure.	See the RF-II OR DADF SERVICE MANUAL.
E500	• DC controller PCB (failure) • Sorter controller PCB (failure) • Sorter cable (failure)	A communication error with the sorter cannot be cleared.
E510	• Feeder motor failure.	See the STAPLE SORTER or STAPLER FOLDER SERVICE MANUAL.

Table 3-37C

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Code	Possible cause	Timing
E512	• No. 1 delivery motor failure.	See the STAPLER FOLDER SERVICE MANUAL.
E514	• No. 2 delivery motor failure.	See the STAPLER FOLDER SERVICE MANUAL.
E520	• Stack motor failure.	See the STAPLER FOLDER SERVICE MANUAL.
E530	• Staple guide bar swing motor rotation failure.	See the STAPLE SORTER OR STAPLER FOLDER SERVICE MANUAL.
E531	• Stapler unit drive motor rotation failure.	See the STAPLE SORTER OR STAPLER FOLDER SERVICE MANUAL.
E535	• Swing unit drive motor failure.	See the STAPLER FOLDER SERVICE MANUAL.
E540	• Bin motor rotation failure.	See the STAPLE SORTER, SORTER VIII, or STAPLER FOLDER SERVICE MANUAL.
E541	• Bin motor rotation failure.	See the SORTER VIII SERVICE MANUAL.
E660 (NP-4835i only)	• IC card unit (failure) • IC card (failure)	The IC card unit has a problem.
E710	• DC controller PCB (failure)	• The IPC (Q104) cannot be initialized when the copier is turned ON.
E711	• DC controller PCB (failure)	An IPC communication error is detected twice or more within one second.
E712	• DC controller PCB (failure) • DF controller PCB (failure) • DF cable (failure)	A communication error with the DF cannot be cleared.
E714 (NP-4835i only)	• DC controller PCB (failure) • IC card harness (failure)	Communication errors with the IC card unit cannot be cleared.

Table 3-37D

Note:

1. To set the copier after activation of the self-diagnosis mechanism, turn it OFF once.
   'E000', 'E001', 'E002', and 'E003', however, will not be cleared by turning the copier OFF; to rest the copier, clear ERROR in the service mode (*4*).

The copier is designed such a way so as to prevent the customer from resetting it for such problem as broken lines in the thermistor, thereby preventing the rollers inside the fixing assembly from overheating and damaging themselves.

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2. When a problem corresponding to 'E000', 'E001', 'E002', or 'E003' is detected, the copier immediately indicates the code and, after about 20 seconds, turns itself OFF.
3. 'E202' and 'E204' can only be checked in the service mode (*1*).
4. When a code in the E400s is indicated, the self-diagnosis mechanism will be activated once again when the power switch is turned OFF and ON, and 'FEEDER FAILURE' will be indicated. At this time, the copier is ready for operation if the feeder is used as the copyboard cover.
5. When a code in the E500s is indicated (except 'E500'), the self-diagnosis mechanism will be activated once again when the copier is turned OFF and ON, and 'SORTER FAILURE. DETACH' will be indicated. At this time, the copier is ready for copy operation if the sorter is detached from the copier, i.e., hold the handle, and slide it to the left.

Self-Diagnosis in Editor

The microprocessor of the editor controller PCB is equipped with a mechanism called self-diagnosis to check its condition. The microprocessor performs self-diagnosis as necessary and, if a problem is identified, it indicates the particulars of the problem by flashing LEDs. The combination of LEDs flashed for the problem and timing for such checks are as follows:

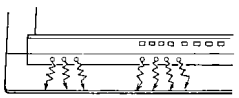
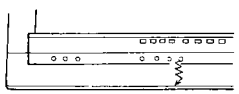
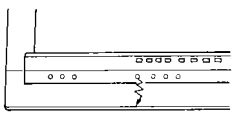
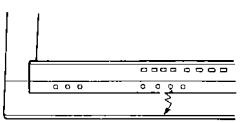
Flashing pattern	Main cause	Check timing
1 	• Broken or disconnected harness • Failure of editor control	• At power-on.
2 	• Broken or disconnected cable between plane-shaped resistor and editor controller	• At power-on.
3 	• Shorted plane-shaped resistor (The coordinates input face of the editor is under pressure in excess of the specified value at time of power-on.)	• At power-on.
4 	• Abnormal data communication	The communication is monitored at all times; the error is indicated if communication is absent for 200 ms or more.

Table 3-38

The LED(s) flashes at 1-minute intervals (ON and OFF).

If the LEDs flash in pattern 1 or 4, the error can be cleared by turning the copier OFF once.

If they flash in pattern 2 or 3, the error is cleared upon removal of the cause.

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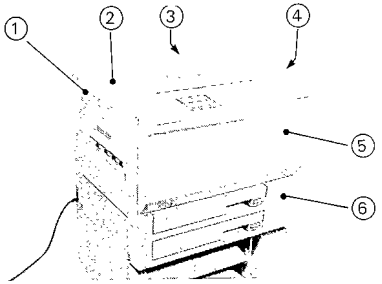
I. EXTERNALS

A. External Covers



① Left cover (7)
② Upper cover (3)
③ Rear cover (8)
④ Right cover (7)
⑤ Front door
⑥ Lower front cover (2)

Figure 4-100

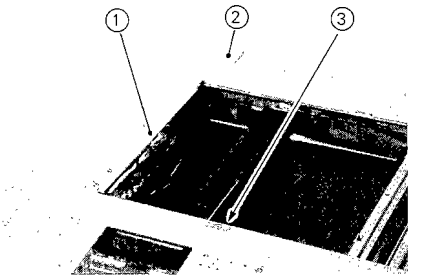
Note:
The number in parentheses indicates the number of mounting screws used.

Remove the covers as necessary as shown below for cleaning, inspecting, or repairing the inside of the copier.

Covers that can be detached by mere removal of the screws are left out of the procedure.

1. Upper Cover

1) Remove the copyboard cover.
2) Remove the control panel. (See p. 4-2.)
3) Remove the rear cover.
4) Remove the two mounting screws, and remove the copyboard glass stopper.
5) Remove the copyboard glass.
6) Remove the white plate.
7) Remove the mounting screw, and remove the magnet plate.
8) Pick the bottom of the bushes (left, right), and push them up to remove.

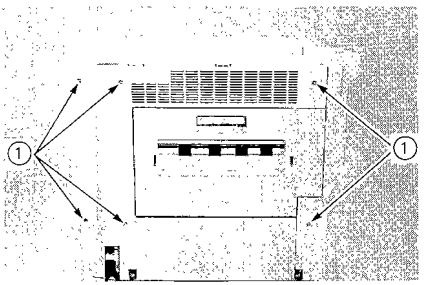


① White plate
② Magnet plate
③ Bush

Figure 4-101

2. Left Cover

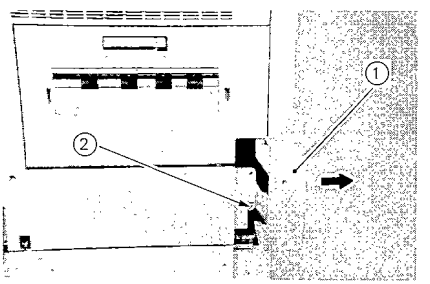
1) Pull out the cassettes from the copier.
2) Remove the six screws shown in Figure 4-102.



① Screws

Figure 4-102

3) Remove the screw while keeping the lower front cover toward the front.



① Lower front cover ② Screw

Figure 4-103

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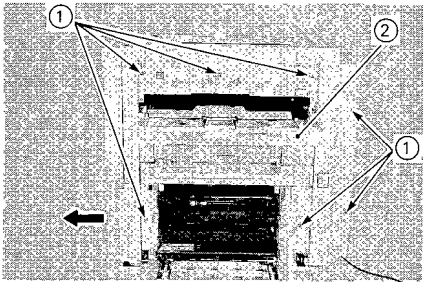
4) Open the front door and delivery unit, and remove the left cover.

3. Right Cover

1) Pull out the cassette from the copier.
2) Remove the seven screws shown in Figure 4-104.
3) Open the front door, and remove the right cover while keeping the lower front cover to the front and the CD unit door open.



① Screws ② CD unit door

Figure 4-104

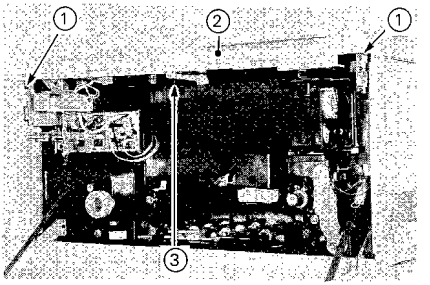
4. Rear Cover

1) Loosen the two screws on the bottom plate; loosen them until they are just about to come off.
2) Remove the four screws on the left and right.
3) Remove the two screws from the top face.

B. Control Panel

1. Removing the Control Panel

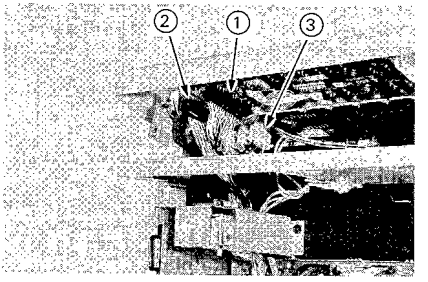
1) Open the front door.
2) Remove the inside left cover; 2 screws.
3) Remove the two screws, and remove the control panel by pulling it up to the front while keeping the hook at the center away.



① Screw ③ Hook
② Control panel

Figure 4-105

4) Remove the connectors (JA, JB, JD), and remove the control panel.



① JA ③ JD
② JB

Figure 4-106

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C. Copyboard Cover

1. Replacing the Reflective Sheet

The reflective sheet is taped to the copyboard stopper plate; to detach it, simply peel it at its corners.

After replacement, press the reflective sheet by hand so that no air is trapped underneath.

D. Fans

1. Outline

The copier is equipped with three fan motors which serve to circulate the air inside and prevent rises in temperature.

The scanner cooling fan (FM1) cools the scanner, heat exhaust fan (FM2) blows the heat from the fixing assembly outside, and feeder fan (FM3) helps feed copy paper.

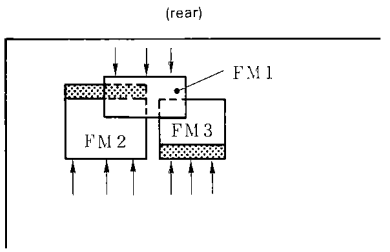
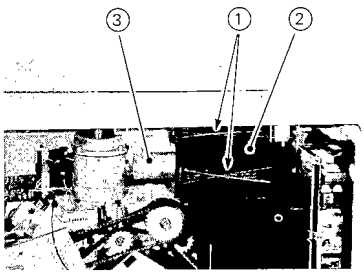


Figure 4-107 Top View

2. Removing the Scanner Cooling Fan (FM1) and Filter

1) Remove the rear cover.
2) Pick the two filter stoppers with fingers, and remove the filter.
3) Remove the scanner cooling fan; 3 screws, 2P connector.

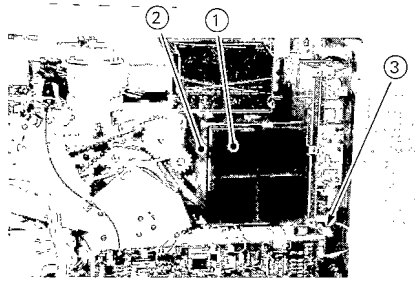


① Filter stoppers
② Filter
③ Scanner cooling fan

Figure 4-108

3. Removing the Heat Exhaust Fan (FM2) and Ozone Filter

1) Remove the rear cover.
2) Remove the ozone filter.
3) Remove the heat exhaust fan; 2 screws, 2P connector.

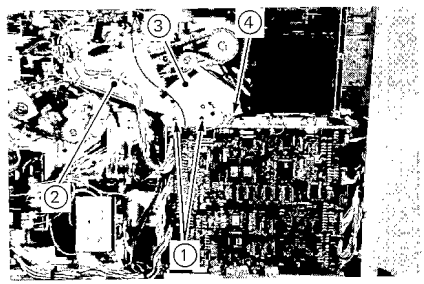


① Ozone filter
② Heat exhaust fan
③ Connector

Figure 4-109

4. Removing the Feeder Fan (FM3) and Ozone Filter

1) Remove the rear cover.
2) Remove the DC controller together with its mounting plate; 2 screws A.
3) Remove the two screws holding the harness mounting plate in place.
4) Remove the feeder fan together with its mounting plate; 1 self-tapping screw.



① Screws A
② Harness mounting plate
③ Feeder fan mounting plate
④ Self-tapping screw

Figure 4-110

5) Remove the two leaf springs, and pull out the ozone filter.

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II. DRIVE SYSTEM

A. Lens Drive Unit

1. Outline

The lens drive unit moves the zoom lens by transmitting the rotation of the lens motor (M3) to the lens drive wire.

2. Disassembly and Reassembly

The unit is pre-adjusted at the factory with high precision. Do not remove parts not listed on the Parts Catalog.

a. Fitting the Lens Drive Wire

1) Fit the lens drive wire in the order shown in Figure 4-200.

Note:
Around the pulley at 3 , wind the wire so that its end leading to the pulley at 4 is on top (4 turns).

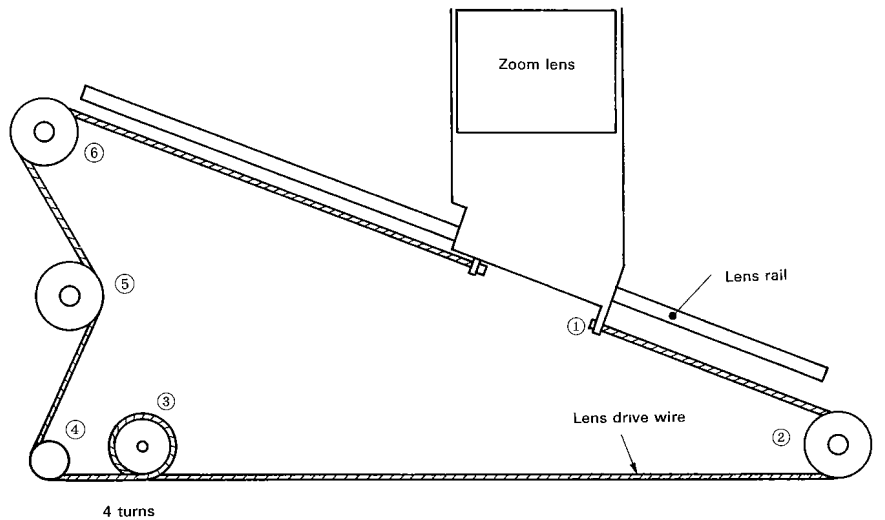

Figure 4-200

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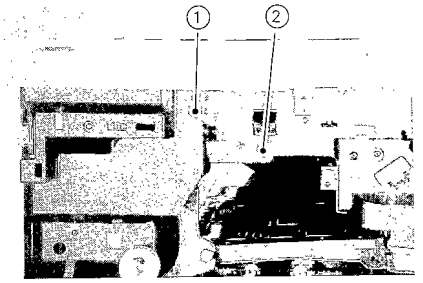
b. Removing the Lens Motor

1) Open the front door, and remove the inside left cover; 2 screws.
2) Remove the document size detection PCB cover; 1 screw.

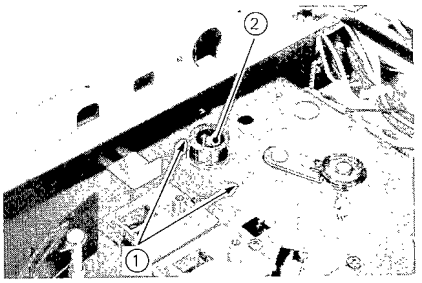


① Inside left cover
② Document detection PCB cover

Figure 4-201

3) Remove the lens drive wire.
4) Remove the two screws shown in Figure 4-202 from below the lens plate.

Note:
Take care not to drop the screws or lens motor.



① Screws ② Lens motor

Figure 4-202

5) Remove J34 (5P), and remove the lens motor.

3. Lubrication

Apply low viscosity oil over the lens rail.

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B. Scanner Drive Unit

1. Fitting the Mirror Drive Wire

1) Loosen the two fixing screws shown in Figure 4-203.
2) Turn the adjusting screw to move the pulley at ③ to the right.
3) Move the mirror 1 plate and mirror 2 plate forward as far as they go.
4) Fit the wire in the order shown in Figure 4-203.
- Put it over the pulleys at ② and ③.
- Wind it clockwise from below to above at 4 (4 turns).
- Put it under the pulleys at ⑤ and ⑥.

5) Adjust the tension of the wire.
6) Adjust the position of the mirror.

2. Adjusting the Tension of the Mirror Drive Wire

To adjust the tension of the mirror drive wire, loosen the fixing screw, and turn the adjusting screw to vary the position of the pulley at 3.

Move the mirror 1 plate toward the home position, and pull at a point of the mirror drive wire between ① and ② in Figure 4-203 to the front with a spring gauge. Make adjustments so that the reading of the spring gauge is 300 g to 400 g when the wire is pulled 10 mm to the front.

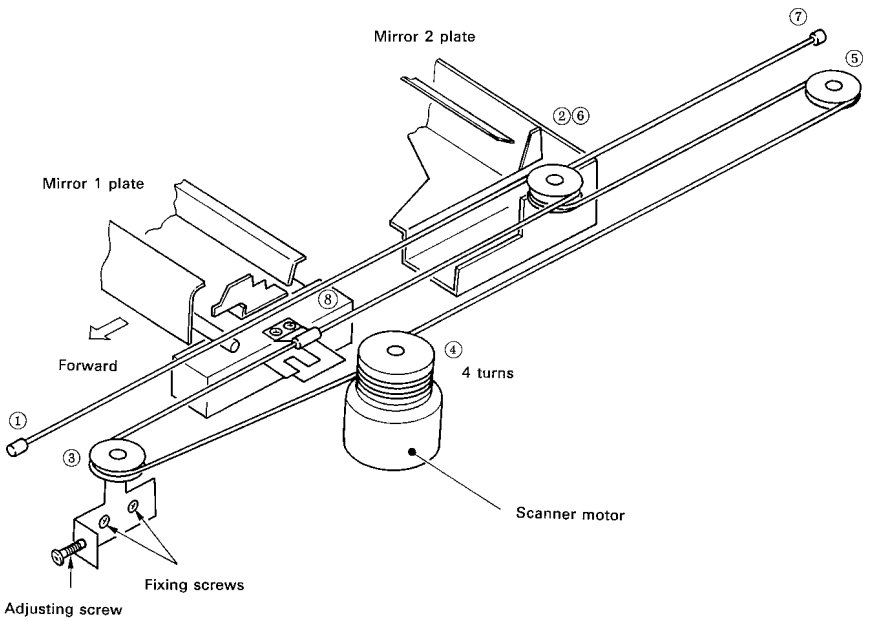

Figure 4-203

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3. Adjusting the Position of the Mirrors (length of optical path between mirror 1 and mirror 2)

Adjust the position of the mirrors when the mirror drive wire is replaced.

To adjust it, vary the position of the metal fixing of the mirror 1 plate.

Note:
After large number of copies have been made, the cable will have stretched. Adjust it in such cases.

1) Get a sheet of copy paper (A4 or Letter), and draw lines 1 cm from its sides as shown in Figure 4-204.

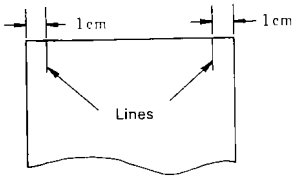

Figure 4-204

2) Use the sheet with lines as a document, and make a copy. (A)
3) Place a blank sheet of paper on the copyboard, and feed the sheet with lines in the manual feed mode. (B)

■ When fed, the sheet fed will show contraction caused by heat.

4) Align the left line of the sheet copied (A) and that of the sheet fed (B). Adjust the position of the mirror 1 stand so that distances X and Y shown in Figure 4-205 are identical.

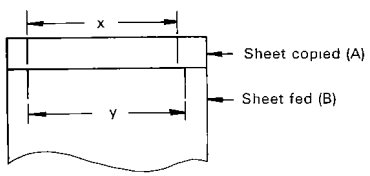

Figure 4-205

x = y Proper
x > y Move the mirror 1 stand in the direction of a .
x < y Move the mirror 1 stand in the direction of b .

Note:
The copy image will be enlarged if the distance between mirror 1 and mirror 2 is short; and reduced, if long.

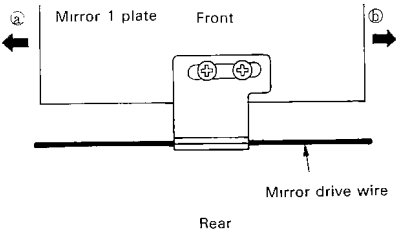

Figure 4-206 Top View

4. Lubrication

After cleaning the scanner rail, apply low viscosity oil over the rail.

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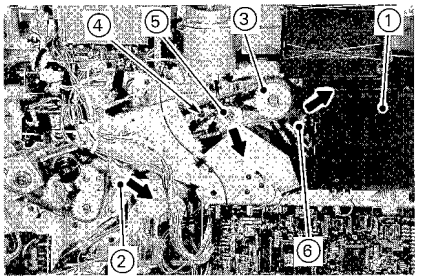
C. Main Motor Unit

1. Removing the Main Motor

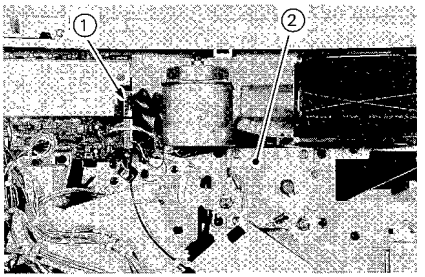
1) Remove the rear cover; 8 screws.
2) Remove the heat exhaust fan; 2 screws, 1 connector.
3) Push sprocket A in the direction of the arrow, and detach chain A from the sprocket of the main motor unit.
4) Mark the position of screw B, and remove it.
5) Push sprocket B in the direction of the arrow, and detach chain B from the sprocket of the main motor unit.
6) Push sprocket C in the direction of the arrow, and detach chain C from the sprocket of the main motor unit.



① Heat exhaust fan
② Sprocket A
③ Sprocket of main motor unit
④ Screw B
⑤ Sprocket B
⑥ Sprocket C

Figure 4-207

7) Remove J804 and four screws, and remove the main motor unit.



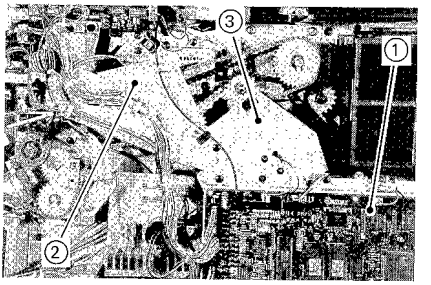
① J804
② Main motor unit

Figure 4-208

D. Lower Feeder Drive Unit

1. Removing the Lower Feeder Drive Unit

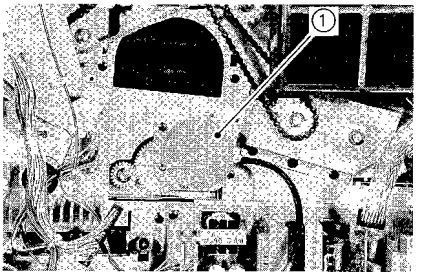
1) Remove the rear cover.
2) Remove the DC controller together with the mounting plate; connector, 2 screws.
3) Remove the two screws holding the harness mounting plate.
4) Remove the feeder fan; 2 screws.



① DC controller
② Harness mounting plate
③ Feeder fan unit

Figure 4-209

5) Remove the lower feeder drive unit; 2 screws.



① Lower feeder drive unit

Figure 4-210

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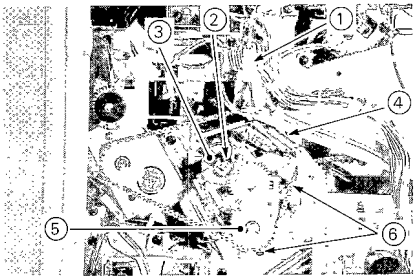
E. No. 1 Registration Roller Drive Unit

1. Removing the No. 1 Registration Roller Clutch, Registration Drive Unit, and Cross-Way Registration Drive Unit

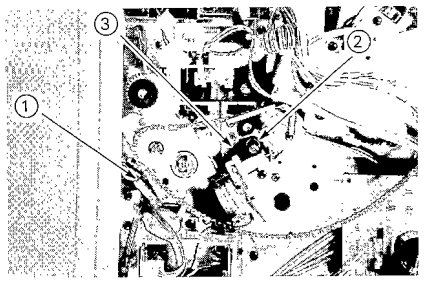
1) Remove the rear cover.
2) Remove connector J30 (2P) and grip ring, and remove the No. 1 registration roller clutch (CL1).
3) Remove the spring, and detach the chain from the sprocket.
4) Remove two screws A, and remove the registration drive unit.



① J30
② Grip ring
③ No. 1 registration roller clutch
④ Spring
⑤ Sprocket
⑥ Screws A

Figure 4-211

5) Remove connector J31 (6P), E-ring, and screw, and remove the horizontal registration drive unit.



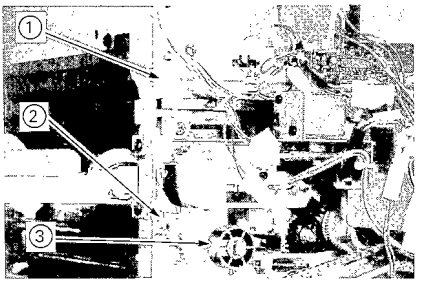
① J31
② E-ring
③ Screw

Figure 4-212

F. Developing Assembly Pressure Clutch Unit (NP-4835 only)

1. Removing the Developing Unit Pressure Clutch Unit

1) Remove the rear and right covers.
2) Remove connector J25 (2P).
3) Remove the stepped screw, loosen the hex stop screw (about half turn), and pull out the developing unit clutch unit.



① J25
② Stepped screw
③ Hex stop screw

Figure 4-213

Note:
To mount the clutch unit, insert a gap gauge (0.15 to 0.20 mm) into the gap shown in Figure 4-214, and tighten the hex stop screw (half turn).

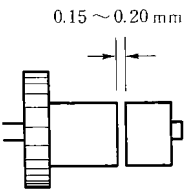


Figure 4-214

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III. FEEDER SYSTEM

A. Pick-Up Unit for Cassettes 1 and 2

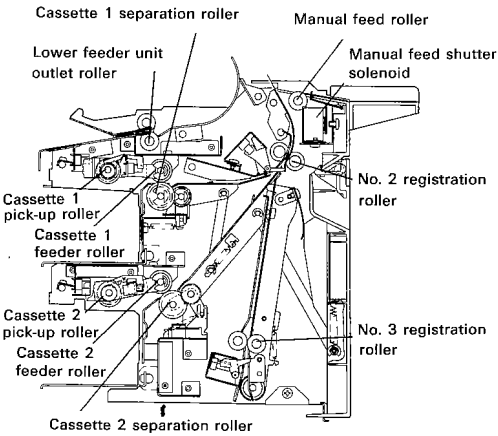

Cassette 1 separation roller
Manual feed roller
Lower feeder unit outlet roller
Manual feed shutter solenoid
No. 2 registration roller
Cassette 1 pick-up roller
Cassette 1 feeder roller
Cassette 2 pick-up roller
Cassette 2 feeder roller
No. 3 registration roller
Cassette 2 separation roller

Figure 4-300 Cross Section

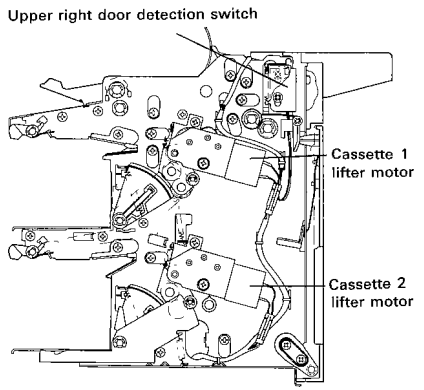


Figure 4-301 Front View

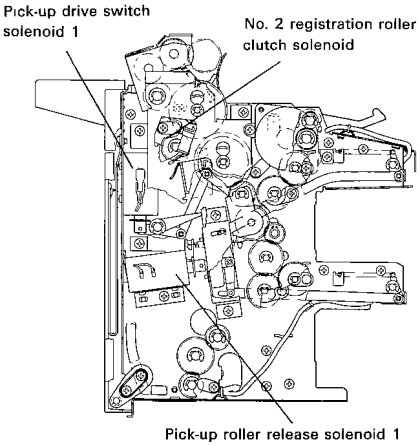


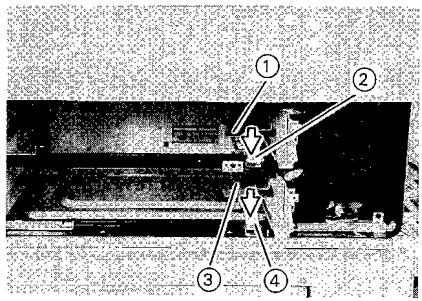
Figure 4-302 Rear View

2. Removing the Pick-Up Unit for Cassettes 1 and 2

1) Remove the right cover.
2) Pull out cassettes 1 and 2 from the copier.

Note:
Do not attempt to remove the pick-up unit with cassettes inside; otherwise, the lifter will hinder removal of both cassettes and pick-up unit.

3) Remove the lower front cover; 1 screw.
4) Remove the rear cover; 4 screws.
5) Pull out J103 from the DC controller.
6) Push lifter release arms 1 and 2 into the direction of the arrow, and lower the lifter.



① Lifter 1
② Lifter release arm 1
③ Lifter 2
④ Lifter release arm 2

Figure 4-303

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7) Open the front door, and remove the grip from the lower feeder outlet; 1 screw.

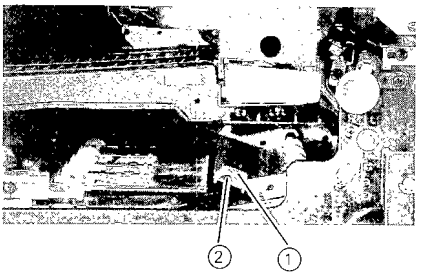
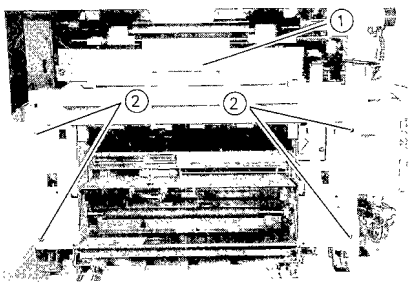


Figure 4-304

① Grip ② Screw

8) Lock the drive gear with the stopper. (See Figure 4-1008 or 4-1106.)
9) Open the upper right door, and remove the four screws.
10) Pull the pick-up unit to the front to remove it while lifting the manual feed tray cover.

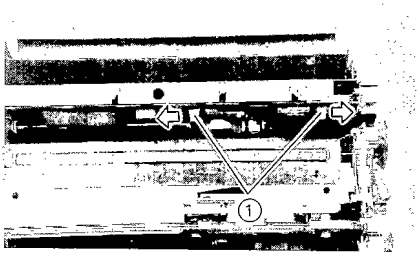


① Manual feed tray ② Screws (4)
cover

Figure 4-305

3. Removing the Pick-Up Roller of Cassettes 1 and 2

1) Remove the pick-up unit.
2) Pull the pick-up roller into the direction of the arrow, and remove it.



① Pick-up rollers

Figure 4-306

Note:
The pick-up roller has its own orientation; attach it as shown in Figure 4-306.

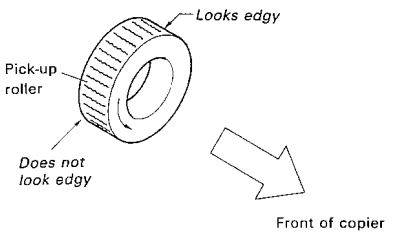
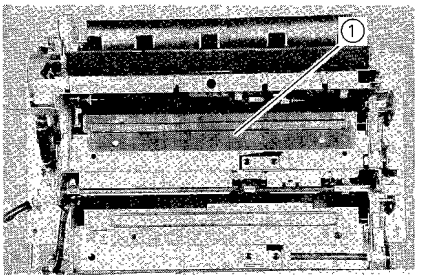


Figure 4-306a

4. Removing the Separation and Feeder Rollers of Cassettes 1 and 2

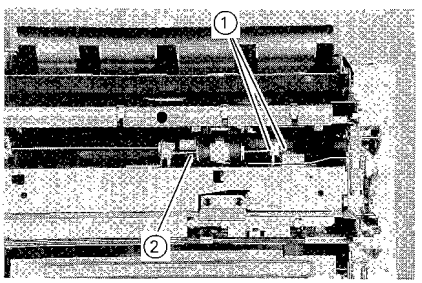
1) Remove the pick-up unit.
2) Remove the pick-up guide plate; 1 screw.



① Pick-up guide plate

Figure 4-307

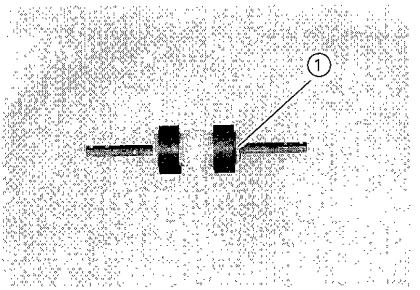
3) Remove the two stop rings with fingers or pincers, and remove the separation roller spindle.



① Stop rings ② Separation roller spindle

Figure 4-308

4) Remove the stop ring, and remove the separation roller.



① Stop ring

Figure 4-309

Note:
The separation roller is designed to rotate in certain direction only. In mounting the separation roller on the pick-up unit, make sure that the arrow shown in Figure 4-309a is farther toward the rear of the copier than the gear on the separation roller.

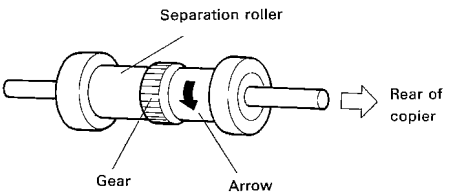
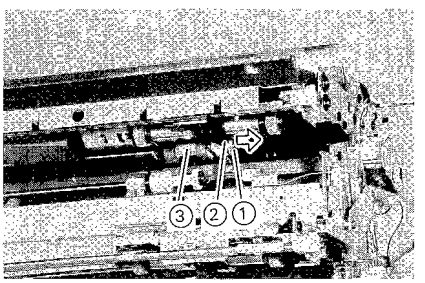


Figure 4-309a

5) Remove the stop ring, push the arm in the direction of the arrow, and remove the feeder roller.



① Stop ring ③ Arm
② Feeder roller

Figure 4-310

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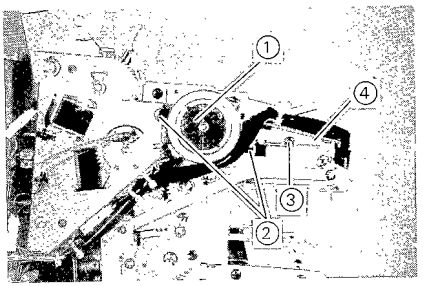
5. Removing the Lower Feeder Unit Outlet Roller

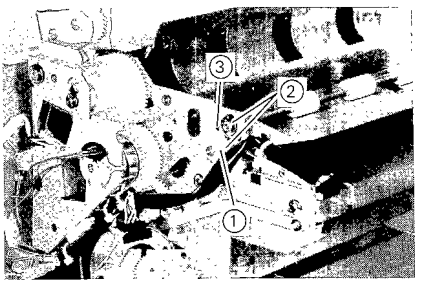
1) Remove the pick-up unit.
2) Remove the lower feeder unit outlet motor; 2 screws.
3) Remove the screw holding the lower feeder unit outlet guide plate (bottom) in place.



① Lower feeder unit outlet motor
② Screws (2)
③ Screw (1)
④ Lower feeder unit outlet guide plate (bottom)

Figure 4-311

4) Remove the gear.
5) Remove the two E-rings.
6) Remove the spring.

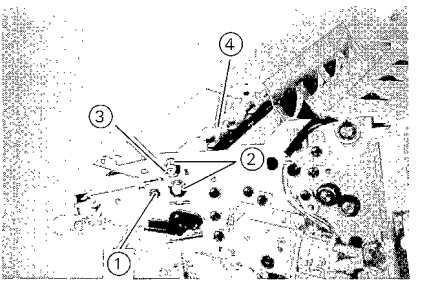


① Gear
② E-rings (2)
③ Spring

Figure 4-312

Note:
Make sure that the spring is hooked on the inside of the pick-up unit when fitting it.

7) Remove the screw holding the lower feeder unit outlet guide plate (bottom) in place.
8) Remove the two E-rings and spring, and remove the lower feeder unit outlet rollers (upper, lower).



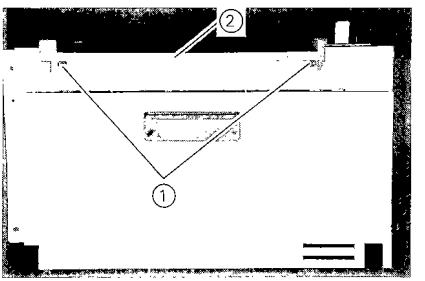
① Screw (1)
② E-rings (2)
③ Spring
④ Lower feeder unit outlet roller (upper)

Figure 4-313

Note:
Make sure that the spring is hooked on the inside of the pick-up unit when fitting it.

6. Removing the Manual Feed Roller

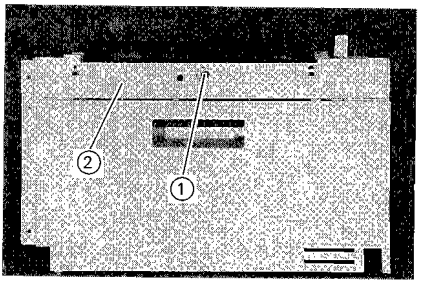
1) Remove the pick-up unit.
2) Remove the manual feed tray; 2 screws.



① Screws (2)
② Manual feed tray

Figure 4-314

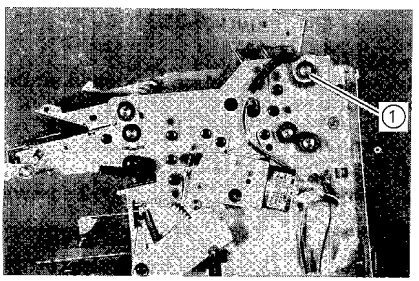
3) Remove the screw, and remove the manual feed lower guide cover.



① Screw (1)
② Manual feed lower guide cover

Figure 4-315

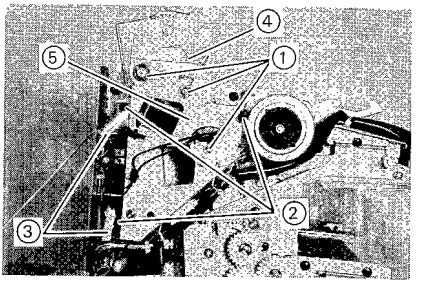
4) Remove the E-ring of the pick-up unit (front).



① E-ring

Figure 4-316

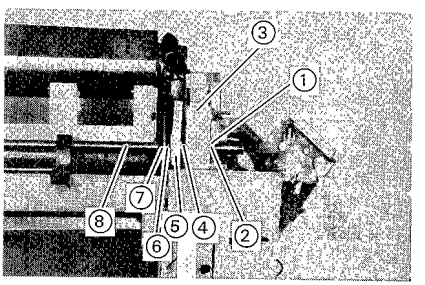
5) Remove the three E-rings and three screws of the pick-up unit (rear).
6) Remove the two connectors (2P).
7) Remove the spring, and remove the gear unit stopper plate.



① E-rings (3)
② Screws (3)
③ Connectors (2)
④ Spring
⑤ Gear unit stopper plate

Figure 4-317

8) Remove the E-ring.
9) Remove the bearing.
10) Pull out the gear unit.
11) Remove the bearing.
12) Remove the gear (w/ washer).
13) Remove the E-ring, pull out the bushing, and remove the manual feed lower roller.



① E-ring (1)
② Bearing (1)
③ Gear unit
④ Bearing (1)
⑤ Gear
⑥ E-ring (1)
⑦ Bushing
⑧ Manual feed lower roller

Figure 4-318

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7. Mounting the Manual Feed Shutter Unit

① Make sure that the tip of the manual feed shutter sticks out 3 mm from the rib surface of the manual feed guide.
② Make sure that the tip of the manual feed shutter is 1 mm below the reference surface of the manual feed guide with the manual feed shutter solenoid OFF.

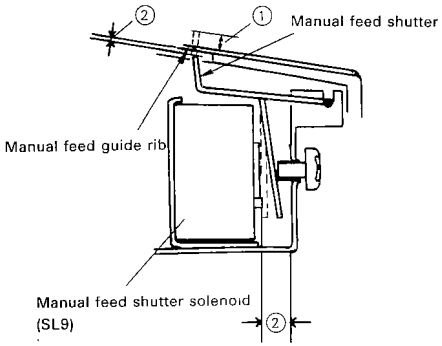


Figure 4-319

8. Mounting Pick-Up Drive Switch Solenoid 1 (SL6)

Make sure that stroke a of pick-up drive switch solenoid 1 (SL6) is 0.2 mm or less with the stopper plate in contact with the outside of the spindle. (See Figure 4-320.)

9. Mounting Pick-Up Roller Release Solenoid 1 (SL7)

Make sure that stroke b of pick-up roller release solenoid 1 (SL7) is 0.2 mm or less with the cassette 1 pick-up roller or cassette 2 pick-up roller released. (See Figure 4-320.)

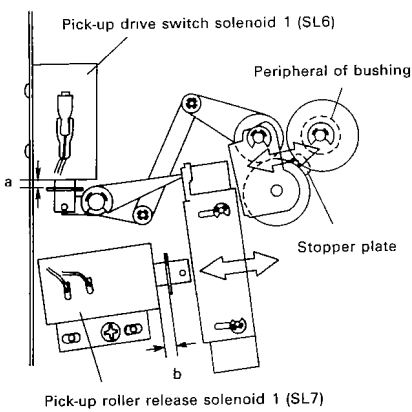
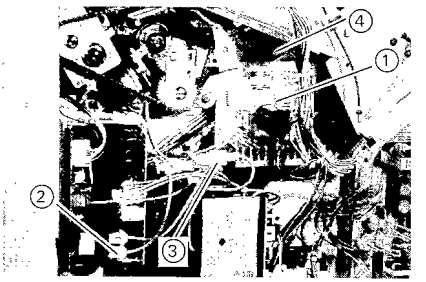


Figure 4-320

B. Feeder Unit

1. Removing the Feeder Unit

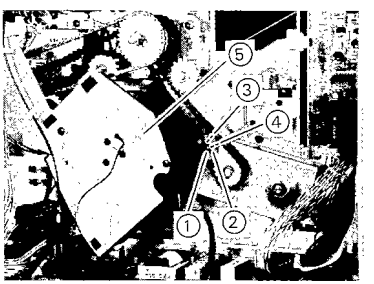
1) Remove the rear cover.
2) Remove the DC controller together with its mounting plate.
3) Remove the sub DC power supply PCB. (NP-4835 only)
4) Pull out the high-voltage connector for transfer (T) and high-voltage connector for separation (S).
5) Remove the grounding wire.
6) Push the transfer/separation high-voltage cord and grounding wire into the copier.



① Sub DC power supply PCB
② High-voltage connector for transfer (T)
③ High-voltage connector for separation (S)
④ Grounding wire

Figure 4-321

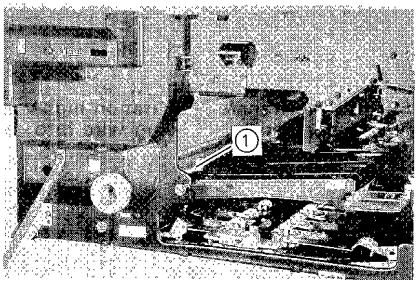
7) Remove the heat exhaust fan.
8) Remove the E-ring.
9) Remove the gear (w/ pin).
10) Remove the E-ring, and pull out the bushing.



① Heat exhaust fan
② E-ring (1)
③ Gear (w/ pin)
④ E-ring
⑤ Bushing

Figure 4-322

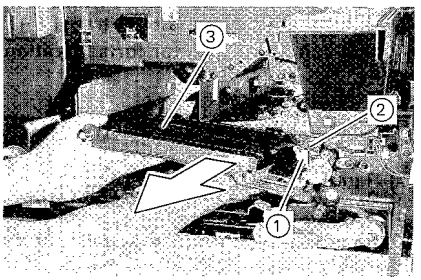
11) Open the front door, and remove the pre-transfer corona unit.
12) Remove the drum unit and transfer corona unit.
13) Remove the paper guide of the fixing assembly.



① Paper guide (fixing assembly)

Figure 4-323

14) Tape the lower transfer guide unit on the upper transfer guide unit.
15) Lift the front of the feeder unit, and pull it out to the front of the copier with care.

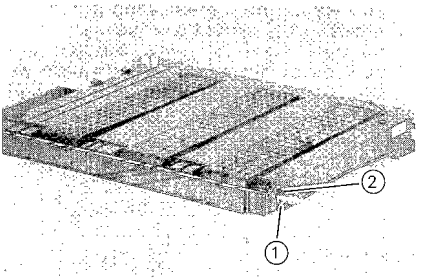


① Lower transfer guide unit
② Upper transfer guide unit
③ Feeder unit

Figure 4-324

2. Removing the Feeder Belt

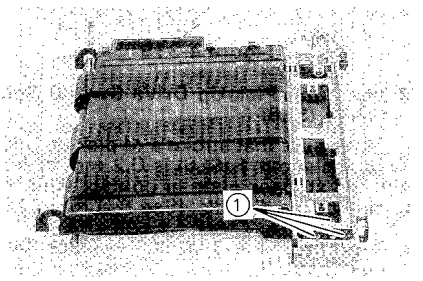
1) Remove the feeder unit from the copier.
2) Remove the E-ring and bushing.



① E-ring (1)
② Bushing

Figure 4-325

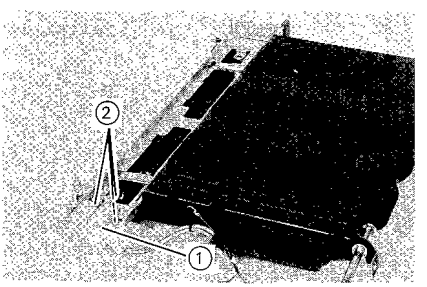
3) Remove the three screws.



① Screws (3)

Figure 4-326

4) Remove the screw, and remove the transfer/separation electrodes.
5) Remove the three screws.



① Transfer/Separation electrodes
② Screws (3)

Figure 4-327

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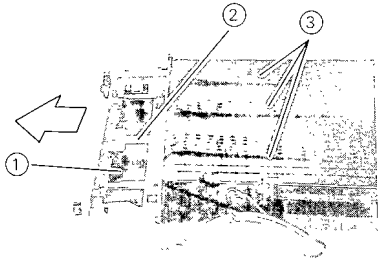
6) Pull the base plate of the feeder unit into the direction of the arrow shown in Figure 4-328, and remove the transfer/separation corona unit guide plate.
7) Detach the feeder belt.



① Feeder unit base plate
② Transfer/Separation guide plate
③ Feeder belt

Figure 4-328

Note:
In mounting the transfer/separation guide plate, take care so that the guide plate is in contact with the bosses of the feeder unit side plate.

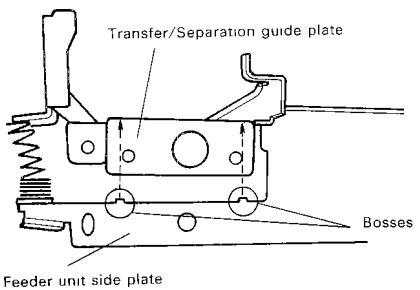
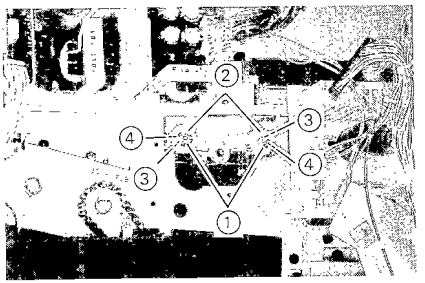


Figure 4-329

C. Lower Feeder Unit

1. Removing Set-Back Rollers 1 and 2

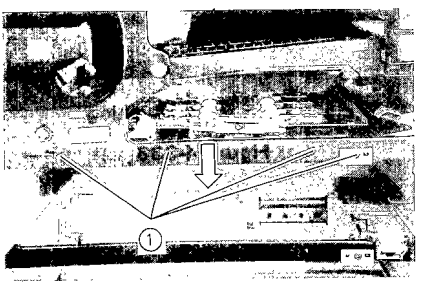
1) Remove the rear cover.
2) Remove the lower feeder drive unit.
3) Remove the E-ring, and pull out the gear (w/ pin).
4) Remove the E-ring, and pull out the bushing.



① E-rings
② Gears (w/ pin)
③ E-rings
④ Bushings

Figure 4-330

5) Remove the front door.
6) Pull out cassettes 1 and 2.
7) Remove the lower front cover.
8) Remove the four screws, push down the lower feeder unit into the direction of the arrow, and remove set-back rollers 1 and 2.



① Screws (4)

Figure 4-331

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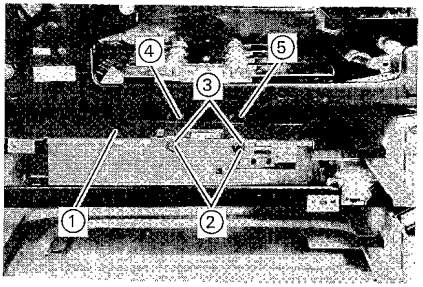
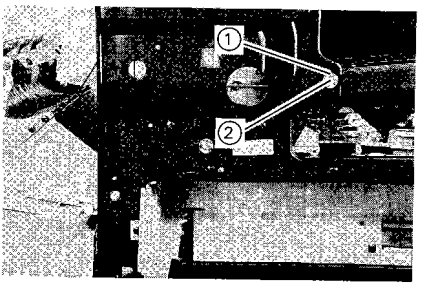


① Lower feeder unit ④ Set-back roller 1
② E-rings ⑤ Set-back roller 2
③ Bushings

Figure 4-332

2. Removing the Lower Feeder Unit Inlet Roller

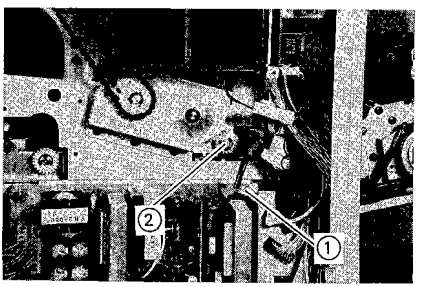
1) Open the front door.
2) Remove the E-ring, and pull out the bushing.



① E-ring ② Bushing

Figure 4-333

3) Remove the rear cover.
4) Pull out the connector.



① Connector ② Lower feeder unit inlet roller spindle

Figure 4-334

5) Move the lower feeder inlet roller unit to the rear of the copier, align the bushing (flat section) with the slit in the rear side plate, and remove the feeder inlet roller unit by pulling it into the direction of the arrow.

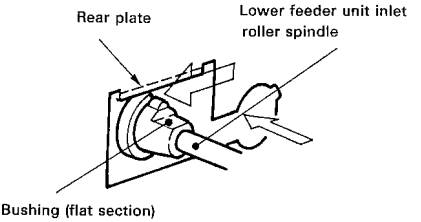


Figure 4-335

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D. Delivery Unit

1. Construction

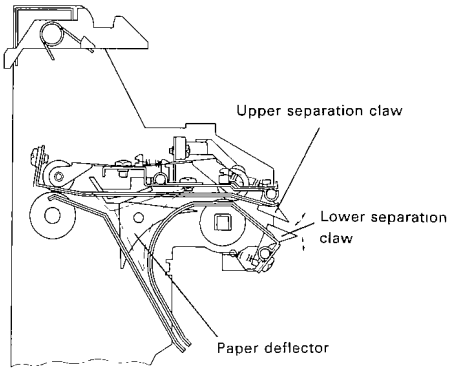


Figure 4-336

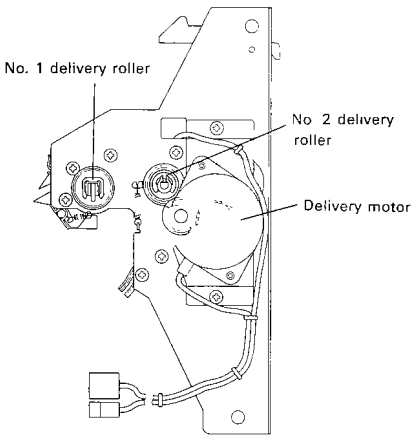
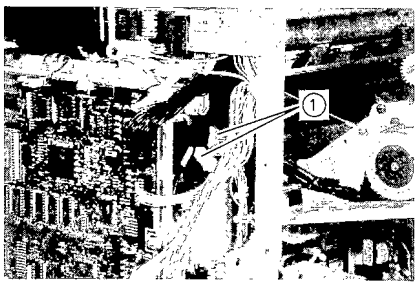


Figure 4-337

2. Removing the Delivery Unit

1) Remove the rear cover.
2) Remove the left cover.
3) Remove the lower front cover.
4) Remove the delivery cover; 2 screws.
5) Pull out the connector from the delivery unit, and push it inside the copier.



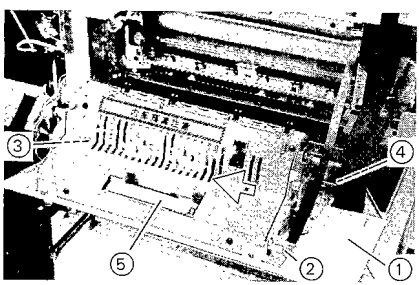
① Connectors

Figure 4-338

6) Remove the grounding wire; 1 screw.
7) Remove the screw from the front and rear of the delivery unit support.

Note:
Support the delivery unit with one hand while removing the screws.

8) Remove the E-ring, and remove the delivery unit by moving it into the direction of the arrow.

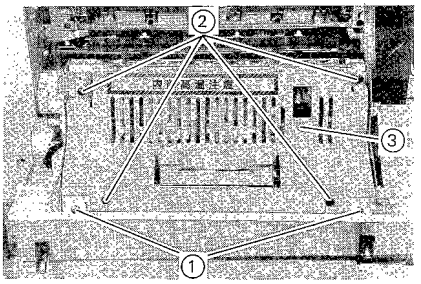


① Delivery cover
② Delivery unit support front screw
③ Delivery unit support rear screw
④ E-ring
⑤ Delivery unit

Figure 4-339

3. Removing the Upper Separation Claws

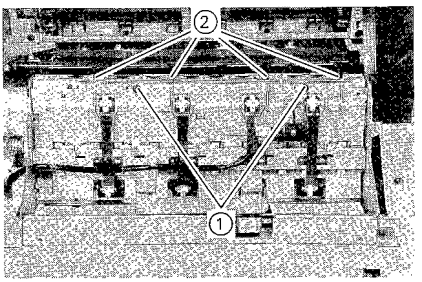
1) Open the delivery unit.
2) Remove the delivery cover; 2 screws.
3) Remove the upper cover; 4 screws.



① Screws (2)
② Screws (4)
③ Upper cover

Figure 4-340

4) Remove the two screws, and remove the upper separation claws.

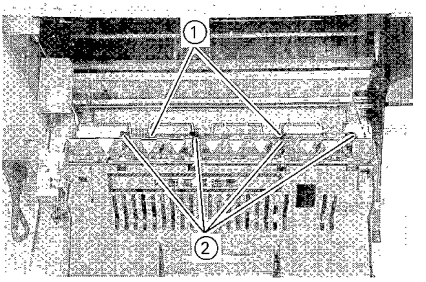


① Screws (2)
② Upper separation claws

Figure 4-341

4. Removing the Lower Separation Claws

1) Open the delivery unit.
2) Remove the two screws, and remove the lower separation claws.



① Screws (2)
② Lower separation claws

Figure 4-342

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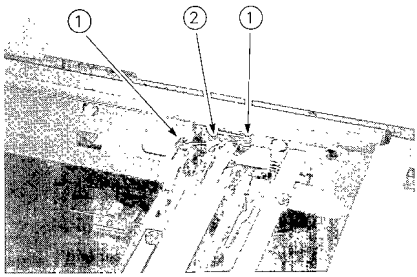
IV. EXPOSURE SYSTEM

A. Exposure Unit

Note:
Be sure to disconnect the power plug when disassembling or checking the exposure unit.

1. Removing the Thermal Fuse

1) Remove the copyboard glass
2) Remove the magnet plate shown in Figure 4-101; 1 screw.
3) Move the mirror 1 stand about 8 cm toward the center from the home position.
4) Remove the two mounting screws, and remove the thermal fuse.

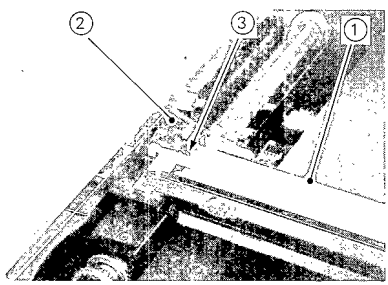


① Mounting screws ② Thermal fuse

Figure 4-400

2. Removing the Scanning Lamp

1) Remove the copyboard glass.
2) Remove the upper reflecting plate; 2 screws.
3) Remove the mounting screw from the lamp support (rear), and remove the scanning lamp.



① Upper reflecting plate
② Lamp support (rear)
③ Scanning lamp

Figure 4-401

Note:
1. Do not perform the work while the scanning lamp is hot.
2. Do not leave finger prints on the surface of the scanning lamp.
3. Wipe the surface of the scanning lamp with a dry cloth if it is soiled.

3. Adjusting the Position of the Side Reflecting Plate

When the side reflecting plate of the mirror 1 stand is moved into the direction of the arrow in Figure 4-402, the light at the edge increases and the image at the edge in turn lightens.

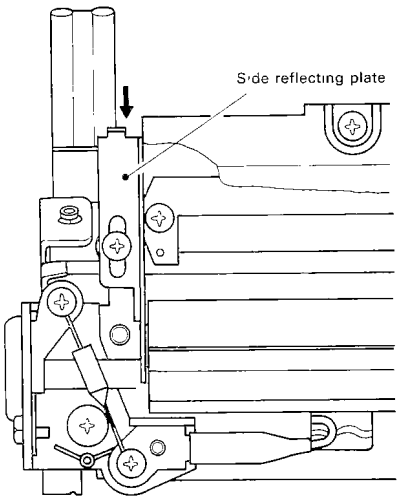


Figure 4-402

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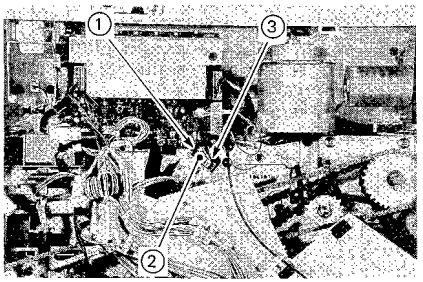
B. Pre-Exposure Lamp Unit

1. Removing the Pre-Exposure Lamp

1) Remove the rear cover.
2) Remove the screw shown in Figure 4-403.
3) Pull out the pre-exposure lamp, and remove connector J20.



① Screw
② Pre-exposure lamp
③ J20

Figure 4-403

C. Laser Scanning Unit (NP-4835/4835i only)

1. Outline

The laser scanning unit consists mainly of the laser unit, laser scanner motor, and 8-facet mirror.

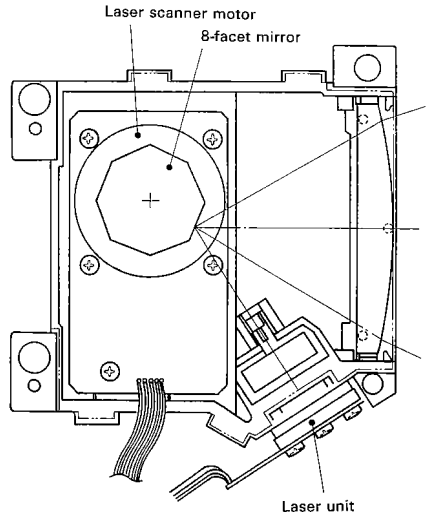


Figure 4-404 Top View

The unit is pre-adjusted at the factory with high precision. The laser unit is the only part that can be replaced in the field. If replacement of laser unit components necessary, replace the laser scanning unit as a whole.

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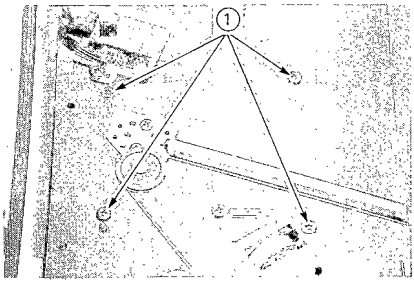
2. Removing the Laser Scanning Unit and Laser Unit

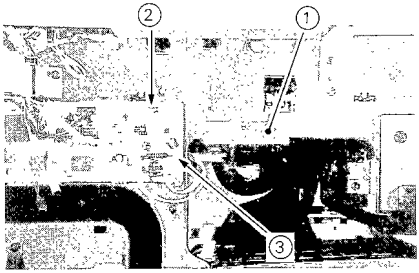
1) Open the front door, and remove the inside left cover; 2 screws.
2) Remove the document size detection PCB cover; 1 screw. (See Figure 4-406.)
3) Remove the copyboard glass.
4) Remove the four screws shown in Figure 4-405 while supporting the laser scanning unit, and remove the laser scanning unit.



① Screws

Figure 4-405

5) Remove connectors J504 and J505 from the laser power controller PCB, and connect J505 to the connector shown in Figure 4-407.

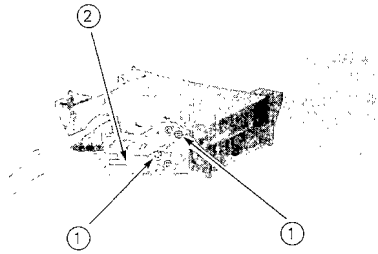


① Document size detection PCB cover
② J504
③ J505

Figure 4-406

Note:
Make sure that J505 is connected to the connector shown in Figures 4-406 and 4-407 while the laser scanning unit is detached. This is a precaution against damage to the laser by static electricity.

6) Remove the two screws shown in Figure 4-407, and remove the laser unit.



① Screws ② Connector

Figure 4-407

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3. Cleaning the Laser Mirror

In the laser exposure system, the following parts need to be cleaned: focusing lens (shaded area in the figure below), dust-proofing glass, and laser mirror. The description below is limited to the laser mirror, for which a special tool is used for cleaning.

- Preparation (wrapping the tool with lint-free paper)

1) Prepare a sheet of lint-free paper (approx. 80 × 160 mm). Fold it in half as shown in the figure below.

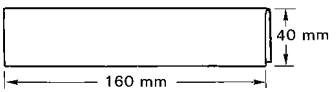
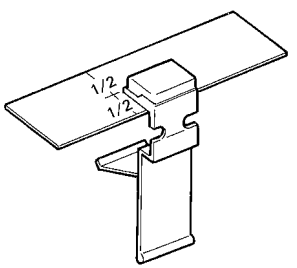


Figure 4-407A

2) Put the tool against the center of lint-free paper as shown in the figure, and fold the lint-free paper.



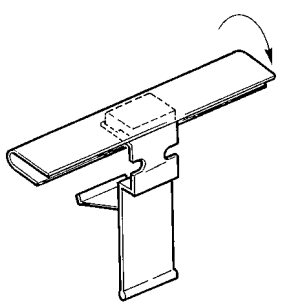
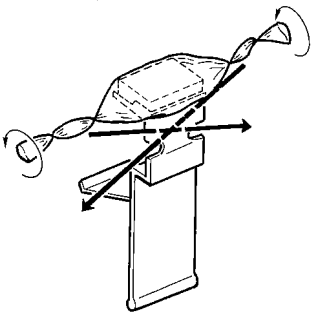


Figure 4-407B

3) Twist both ends of lint-free paper in the direction shown below. Then cross both ends at the back of sponge and push the tip into the cut of the tool.



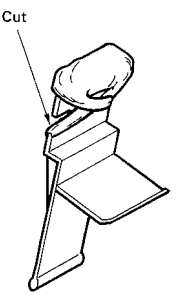


Figure 4-407C

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■ Procedure for Cleaning

1) Take out CD unit
2) Open the front door, and insert door switch actuating tool. Release black developing assembly by service mode "DEV-REL".
3) Pull out door switch actuating tool. Release feeder assembly, open hopper and pull out pre-transfer corona assembly.
4) Take out drum unit.
- Make sure to put the drum unit in a black vinyl bag to shield the light.

5) Pull out two dust-roofing glasses.
6) As shown in the figure below, hold the tool with lint-free paper. Press the two surfaces on the tool (shown in the figure) against the rail f copier main body and move the tool quietly back and forth to clean the mirror.

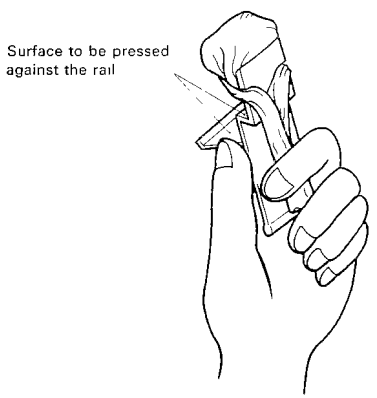


Figure 4-407D

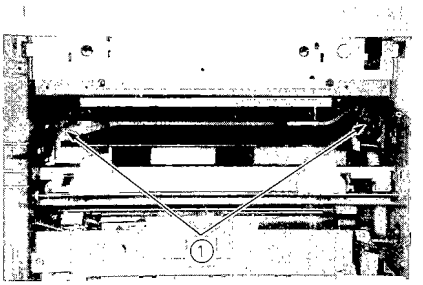
Notes:
1. BE careful not to hurt the hand with separation claw. Also, do not scratch tip of the separation claw.
2. Do not touch the black developing cylinder.
3. Use new lint-free paper for each service visit.
4. If the mirror is excessively dirty, the cause may be poor attachment of dust-proofing glass, or defective seal for cleaning/developing assembly.

7) Attach all removed parts by reversing the above steps.

D. Blank Exposure Lamp Unit (NP-4835S/4335 only)

1. Removing the Blank Exposure Lamp

1) Remove the drum unit.
2) Remove the right cover.
3) Remove the two springs.



① Springs

Figure 4-407E

Note:
Mount the longer spring closer to the front.

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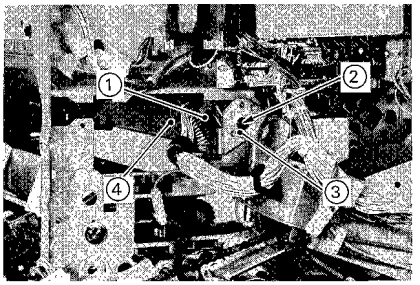
4) Remove the rear cover, remove the connector and screw; then remove the blank exposure lamp supports.

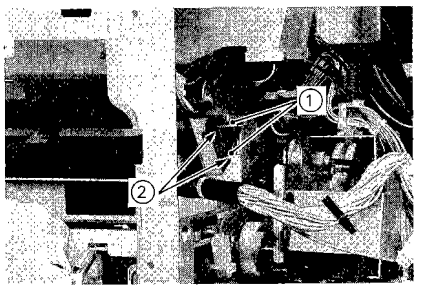


① Connector ② Screw
③ Blank exposure lamp support
④ Blank exposure lamp

Figure 4-407F

5) Remove the blank exposure lamp.

Note:
When re-installing the blank exposure lamp, insert the two pins on the blank exposure lamp supports into the holes in the blank exposure lamp as shown in Figure 4-407G.



① Pins ② Holes

Figure 4-407G

2. Adjusting the Position of the Blank Exposure Lamp

1) Set a Test Sheet on the copyboard.
2) Check if the registration is correct on both left and right sides. If not, make adjustments.
3) Select A4/Letter copy paper.
4) Make a single copy in the DIRECT mode.
5) Check the image, and measure the width of the non-image area shown in Figure 4-407H.

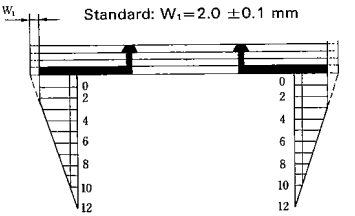
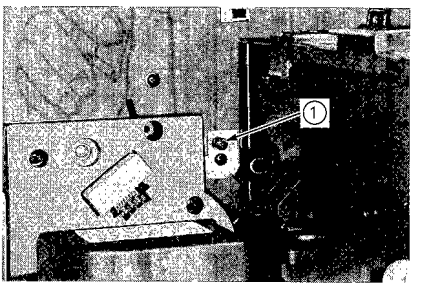


Figure 4-407H

6) If the width is out of standard, turn the adjusting screw to adjust the position of the blank exposure lamp.



① Adjusting screw

Figure 4-407I

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V. CORONA SYSTEM

A. Drum Unit

1. Outline

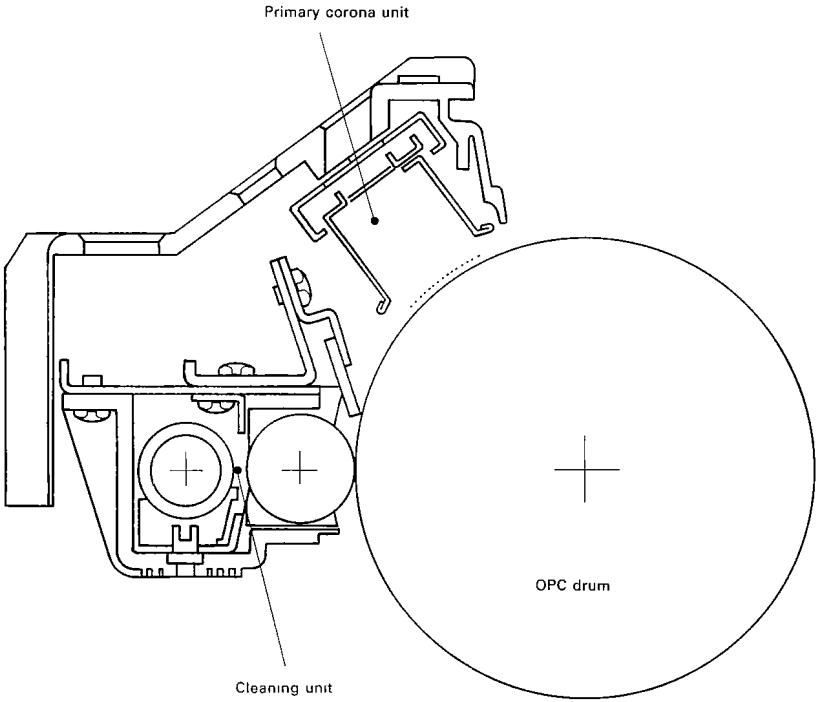


Figure 4-500

2. Removing the Drum Unit

1) Open the CD unit door, and remove the CD unit.
2) Open the front door.
3) Insert the door switch actuator into the door switch.
- Wait until the warm-up is complete.

4) Push the service mode switch with a hex key or the like.
- The copier will enter the service mode and indicate 'S' at the upper left of the message display.

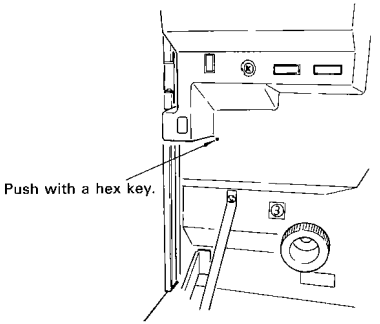


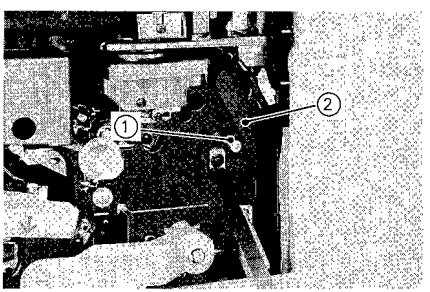
Figure 4-501

5) Press the ✳, 4, and ✳ keys, ↓ key three times.
- The copier will enter the function mode and indicate 'DEV_REL'.

6) Press the CASSETTE SELECT key.
- The copier will indicate 'DEV_REL:1', and the black developing assembly will be released.

7) Pull out the door switch actuator.

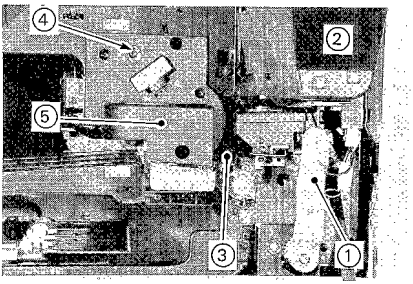
Note:
Perform steps 1) through 7) for the NP-4835 only; for the NP-4835S/4335, open the front door, remove the stepped screw, and release the black developing assembly by shifting the pressure lever.



① Stepped screw ② Pressure lever

Figure 4-501A

8) Shift the feeder unit release lever.
9) Open the hopper.
10) Pull out the Pre-transfer corona unit.
11) Remove the screw, and pull out the drum unit.



① Feeder unit release lever
② Hopper
③ Pre-transfer corona unit
④ Screw
⑤ Drum unit

Figure 4-502

12) Remove the drum unit while holding it as shown in Figure 4-503.

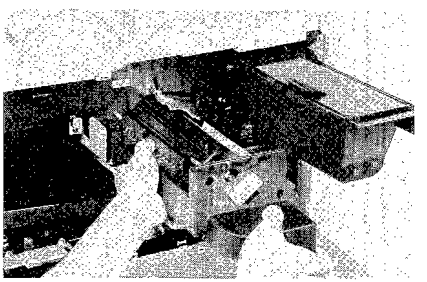


Figure 4-503

The OPC drum used in the copier is sensitive to light. Exposure even to room light can result in poor transfer or black strips. Be sure to wrap the OPC drum with a light blocking sheet (copy paper if not available) and place it in the dark on a flat surface whenever it is removed from the copier.

Note:
1. The drum separation claw will be released automatically upon insertion of the OPC drum unit. Keep away from the drum separation claw.
2. Check that the drum separation claw is in contact with the OPC drum after mounting the drum unit.

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3. Cleaning

If the surface of the drum is soiled, clean it with a flannel (lint free) cloth coated with toner. Do not use paper (lint-free or others).

> Do not use solvents or clean the drum without toner over the flannel cloth. Never use drum cleaning powder.

4. Points to Keep in Mind for Replacement

Be sure to record the date and the count on the label shown in Figure 4-504 after replacing the drum unit. Put the label on the front cover of the new drum unit.

日付 date date Datum	カウンター counter compteur Zähler	備考 notes note Notiz

Figure 4-504

5. Waste Toner

a. Outline

The waste toner collected by the cleaning unit is kept inside the OPC drum. When the inside of the drum is full of waste toner, the message 'WASTE TONER FULL' will be indicated on the message display while in copy operation. Replace the drum unit when the message appears.

Note:
Copies may still be made even after the message appears; about 1,000 copies or so thereafter, however, waste toner will start to drop into the feeder unit.

B. Corona Units

1. Outline

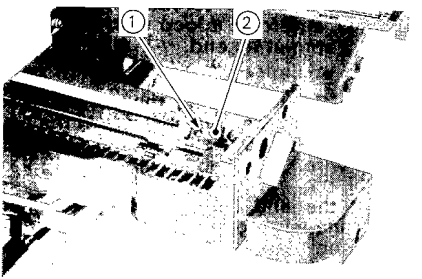
The OPC drum is surrounded by three corona units; i.e., primary, pre-transfer, and transfer/separation corona units.

The primary corona unit is equipped with 16 grids. Each grid is made of a corona wire with a diameter of 0.1 mm. The corona wires used for other than that is 0.06 mm in diameter.

The corona wire is gold-plated, but the corona wire used for the grids is not. In the field, however, gold-plated wires may be used for the grids as well.

2. Disassembly and Assembly

a. Removing the Primary Corona Unit
1) Pull out the drum unit.
2) Remove the screw, and remove the wire cleaner.

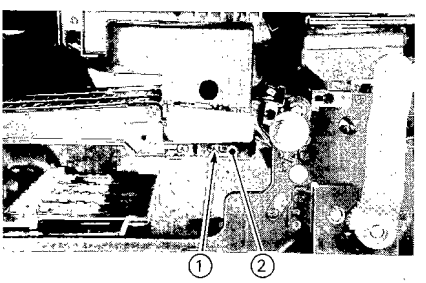


① Screw ② Wire cleaner

Figure 4-505

3) Pull out the primary corona.

b. Removing the Transfer/Separation Corona Units
1) Open the front door.
2) Remove the screw, and remove the wire cleaner.



① Screw ② Wire cleaner

Figure 4-506

3) Release the feeder unit.
4) Pull out the transfer/separation corona units.

Note:
Make sure that the corona wire is in the pad when mounting the wire cleaner. Further, make a copy after mounting the drum unit to check the image.

c. Fitting the Corona Wires for the Primary, Pre-transfer, and Transfer/Separation Corona Units
1) Remove the shield plate (to remove the primary corona unit); 1 screw.
Open the shield plate (to remove the separation corona unit), and remove the paper guide; 1 screw.
2) Move the two covers of the corona unit to the end of the corona unit, and remove them.
3) Free a length of wire (about 4 mm) from the reel of the corona wire (0.06mm dia.), and form a loop with a diameter of 2 mm at its end.

Note:
To form the loop, wind the corona wire around the hex key once, and turn the hex key three to four times; thereafter, twist the corona wire.

4) Cut the end (excess) of the twisted corona wire to less than 1 mm with a nipper.
5) Hook the loop of the corona wire as shown in Figure 4-507, and lead the corona wire along the V-shaped groove of the height adjusting block.
Hook the corona wire spring on the corona wire, and twist the spring three to four times at the point shown in the figure.

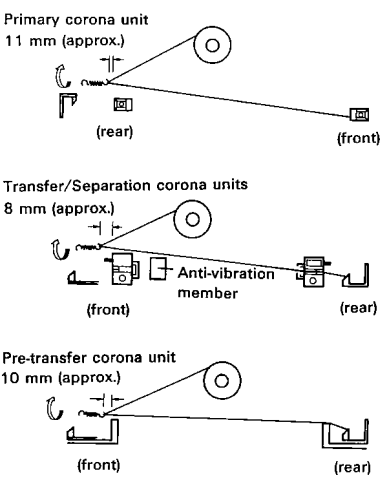


Figure 4-507

6) Cut the end (excess) of the corona wire to 1 mm or less with a nipper.
7) Pick the end of the corona wire spring with tweezers, and hook it on the corona electrode.

Check the following:
- The corona wire is free of bends or twists and its gold-plating has not peeled.
- The corona wire is free of slacks.
- The corona wire is inside the V-shaped groove of the height adjusting block.
- The corona wire is inside the groove of the anti-vibration roller member.
- Guide wire of the transfer/separation corona units is inside the groove.

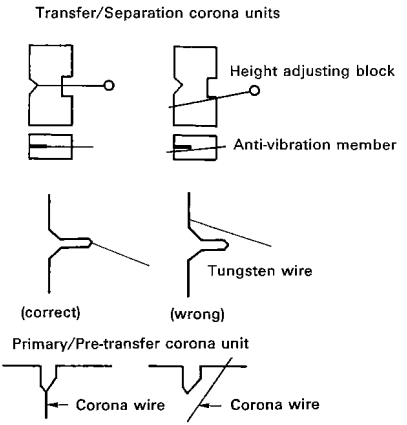


Figure 4-508

Note:
Take care so that the guide wire is not fitted with too strong a tension. Measure the width of the opening of the corona unit, and check that the width at the center is not more than 0.5 mm different from the ends.

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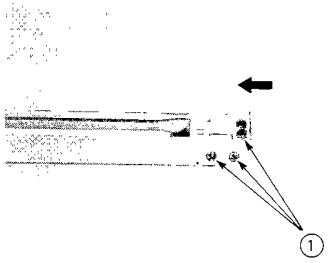
d. Fitting the Grid Wire for the Primary Corona Unit

1) Loosen the three screws holding the block (front) in place, move the block (front) into the direction of the arrow shown in Figure 4-509, and tighten it temporarily.



① Mounting screws

Figure 4-509

Note:
To form the loop, wind the corona wire around the hex key once, and turn the hex key three to four times; thereafter, twist the corona wire.

2) Free a length of wire from the reel of the corona wire (0.1mm dia.), and form a loop with a diameter of 2 mm at its end.
3) Cut the end of the twisted corona wire (excess) to less than 1 mm with a nippier.
4) Hook the loop on the stud shown in Figure 4-510, and fit it in the order shown in the figure.
5) After (Figure 4-510), wind the end of the corona wire around the fixing screw to fix it in place.
6) Cut the excess wire to less than 1 mm with a nipper.
7) Loosen the screw tightened temporarily in step 1) once again, and move the block into the opposite direction of the arrow shown in Figure 4-509, and adjust the tension of the grid wire.
8) Wipe the grid wire with a dry cloth.
9) Check the following:

- The grid wire is free of bends or twists and its gold plating has not peeled.
- The wire is fitted at equal intervals, i.e., the grid wire is inside the groove of the block.

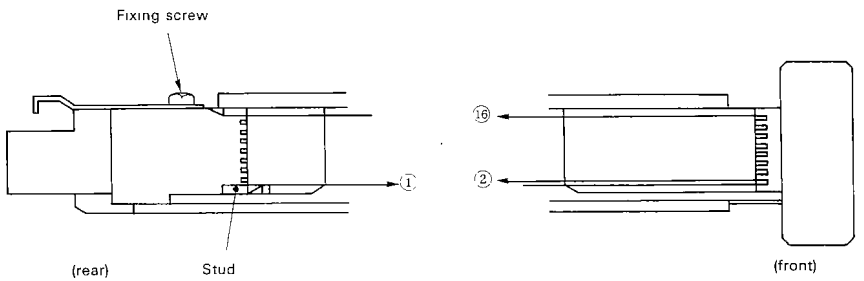


Figure 4-510

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3. Adjusting the Height of the Corona Wire

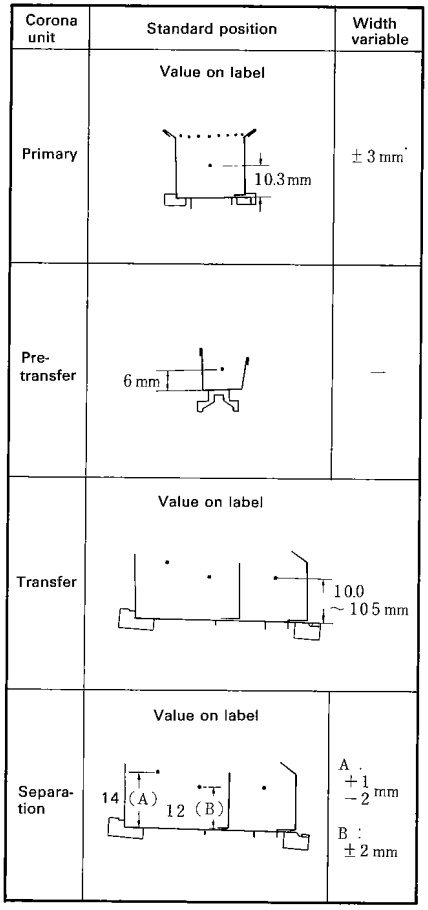

Figure 4-511

a. The height (position) of each corona wire can be adjusted by turning the screw behind the corona unit. A single turn of the screw changes the position of the corona wire by about 0.7 mm.
b. The values shown in Figure 4-511 are standard values, and values adjusted to at the factory are recorded on the label attached behind the front door and on the drum unit. Make adjustments with reference to the values recorded on the labels.

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C. Separation Claw Unit

1. Outline

The separation claw moves back and forth over a distance of 16 mm in the axial direction of the drum. It makes a round trip for each 75 sheets fed (approx.; A4, single).

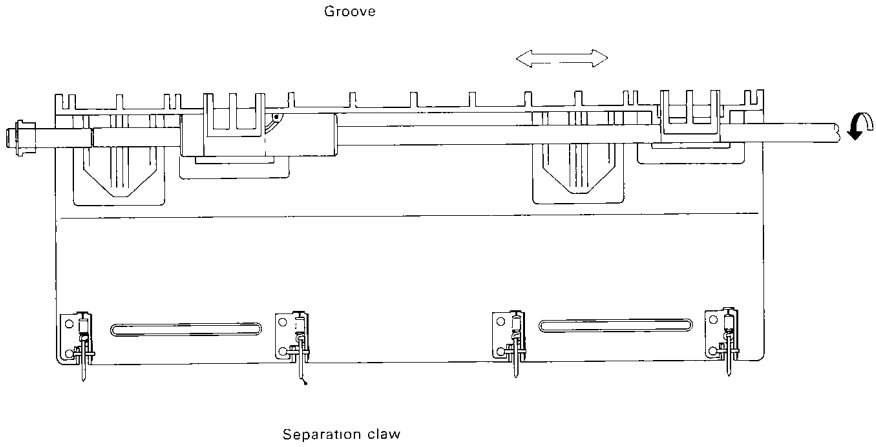
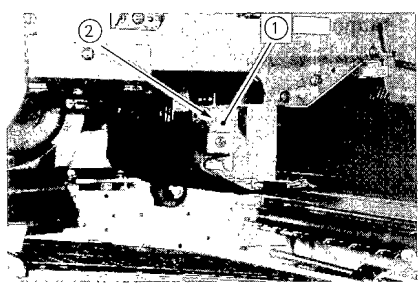


Figure 4-512

2. Removing the Separation Claw

1) Open the front door.
2) Remove the drum unit.
3) Remove the separation claw spindle stopper; 1 screw.
4) Push the bushing to the rear, and remove the separation claw.

Note:
Make sure that the tip of the separation claw will not come into contact with the belt or other parts. After removal, take care not to damage the separation claw.



① Separation claw spindle stopper ② Bushing

Figure 4-513

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VI. DEVELOPING SYSTEM

A. Black Developing Unit

1. Construction

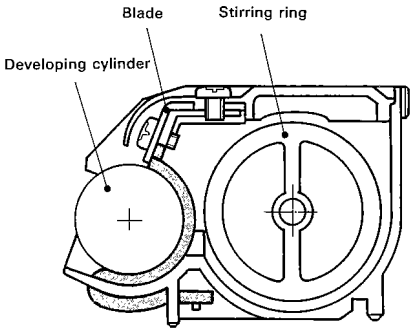
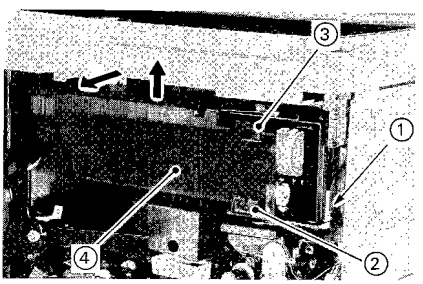


Figure 4-600

2. Removing the Hopper and Black Developing Assembly

1) Open the front door.
2) Remove the connector (J5, 2P).
3) Pull out the shutter; 1 screw.
4) Remove the upper stopper plate; 1 screw.
5) Lift the hopper, and remove it while tilting it to the front.



① Connector
② Shutter
③ Upper stopper plate
④ Hopper

Figure 4-601

6) Insert the door switch actuator into the door switch.
- Wait until the warm-up is complete.

7) Push the service mode switch with a hex key or the like.
- The copier will enter the service mode and indicate 'S' at the upper left of the message display.

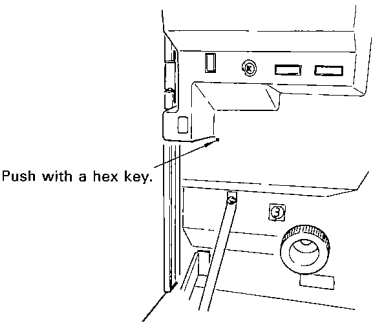


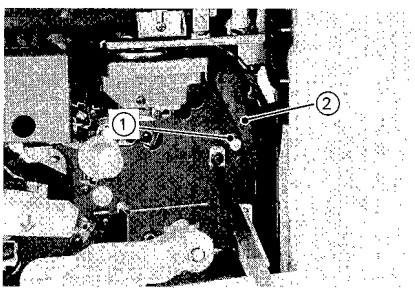
Figure 4-602

8) Press the [*], [4], and [*] keys, and press the [↓] key three times.
- The copier will enter the function mode and indicate 'DEV_REL'.

9) Press the CASSETTE SELECT key.
- The copier will indicate 'DEV_REL:1', and the black developing assembly will be released.

10) Pull out the door switch actuator.

Note:
Perform steps 6) through 10) for the NP-4835 only; for the NP-4835S/4335, open the front door, remove the stepped screw, and release the black developing assembly by shifting the pressure lever.



① Stepped screw ② Pressure lever

Figure 4-602A

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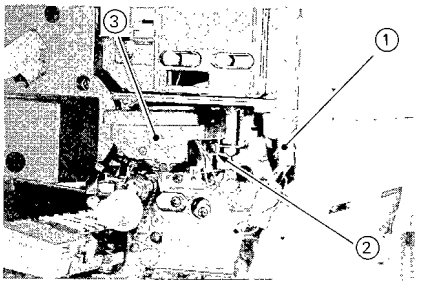
11) Shift the feeder unit release lever.
12) Remove the connector (J26, 3P) and screw from the black developing assembly.



① Connector
② Screw
③ Black developing assembly

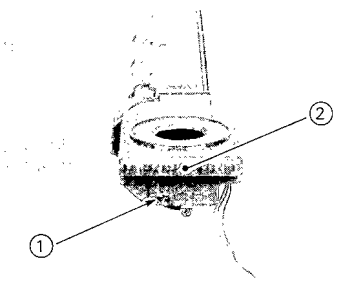
Figure 4-603

13) Pull out the black developing assembly to the front with care, and remove the black developing assembly while supporting it at its bottom.

> Do not hold the developing assembly with fingers over the developing cylinder; otherwise, toner may stick and cake up.

3. Removing the Blade and Developing Cylinder

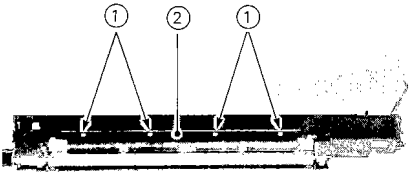
1) Remove the developing cylinder from the copier.
2) Remove the self-tapping screw, and remove the hand grip.



① Self-tapping screw
② Hand grip

Figure 4-604

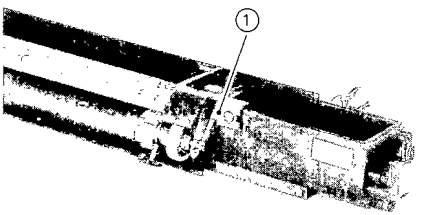
3) Remove the four non-magnetic screws, and remove the developing assembly cover.



① Non-magnetic screws
② Developing assembly cover

Figure 4-605

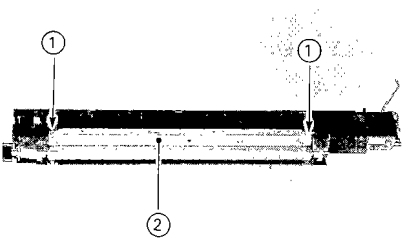
4) Empty the developing assembly of toner over a newspaper or waste sheet.
5) Remove the electrode plate (front); 1 screw.



① Electrode plate (front)

Figure 4-606

6) Remove the two non-magnetic screws, and remove the blade together with the mounting plate.



① Non-magnetic screws
② Blade

Figure 4-607

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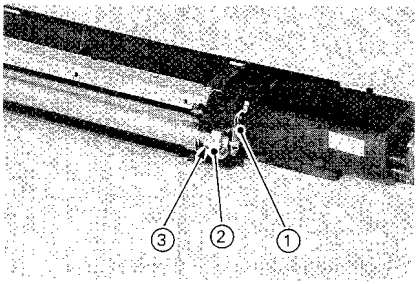
7) Remove the electrode fixing plate; 1 self-tapping screw.
8) Remove the grip ring, and remove the developing assembly roller and ball bearing.

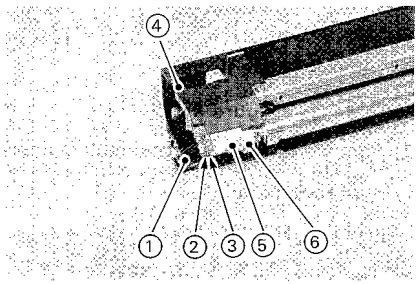


① Electrode fixing plate
② Developing roller
③ Ball bearing

Figure 4-608

9) Remove the grip ring, and remove gear A.
10) Remove the grip ring, and remove the washer and bushing.
11) Remove the gear unit; 2 non-magnetic screws.
12) Remove gear B and developing assembly roller.

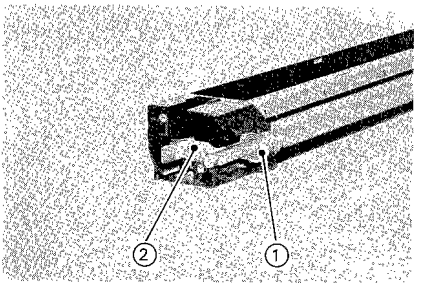
Note:
Take care not to drop the pin.



① Gear A
② Washer
③ Bushing
④ Gear unit
⑤ Gear B
⑥ Developing assembly roller

Figure 4-609

13) Remove the self-tapping screw, and remove the electrode plate (rear) together with the ball bearing.



① Ball bearing
② Electrode plate (rear)

Figure 4-610

14) Remove the developing cylinder.

4. Mounting the Developing Cylinder and Blade

1) Mount the developing cylinder.

Note:
The developing cylinder needs to be mounted in its correct orientation; keep its end with the longer spindle toward the rear.

Note:
Do not leave finger prints or oil on the surface of the developing cylinder. Clean it with lint-free paper if found.

2) Mount the ball bearing together with the electrode plate to the rear. (See Figure 4-610.)

Note:
Do not fit the screw for the electrode plate at the time.

Note:
Turn the electrode plate into the direction of the arrow (Figure 4-611) to make way for the blade mounting plate to be mounted in step 5).

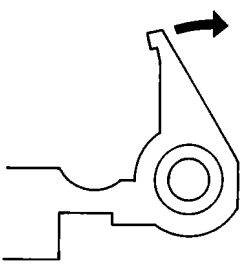


Figure 4-611

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Note:
Make sure that the ball bearing (rear) is in contact with the developing cylinder.

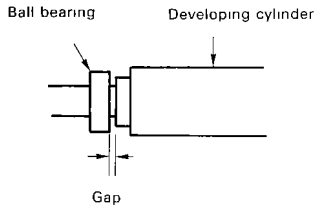

Figure 4-612

3) Fit the ball bearing on the front.
4) Loosen the five screws holding the blade in place on the mounting plate. (See Figure 4-613.)
5) Mount the mounting plate together with the blade; 2 non-magnetic screws. (See Figure 4-607.)

Note:
The gap between the blade and developing cylinder is protected by the plate width of the scrapers located at the front and rear; in mounting the scraper, make sure that the scraper is butted against the blade.

Note:
Take care so that side seal 2 (Figure 4-616) is not trapped under the scraper.

6) Push the blade lightly against the developing cylinder, and tighten the screws in the order shown in Figure 4-613.

Note:
Do not force the blade against the developing cylinder; otherwise, the rotation of the developing cylinder will be hindered.

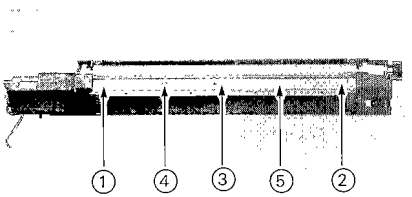

Figure 4-613

7) Turn the electrode plate at the rear into the direction of the arrow (Figure 4-614), and fix it with a self-tapping screw.

Note:
Check that the blade mounting plate and the electrode plate are in contact with each other.

Note:
Check that the electrode plate has not ridden over the blade mounting plate.

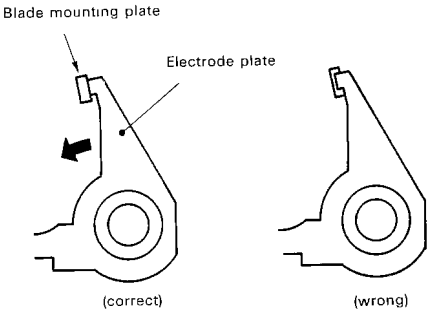

Figure 4-614

8) Mount the developing roller, pin, and gear B in the rear. (See Figure 4-609.)
9) Mount the gear unit together with the bushing; 2 non-magnetic screws. (See Figure 4-609.)
10) Fit the washer, and insert the grip into the groove of the developing cylinder spindle. (See Figure 4-609.)
11) Fit gear A, and fix it in place with a grip ring.

Note:
Allow a gap of about 0.3 mm between the roller and grip ring, and check that the roller rotates smoothly.

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13) Fit the electrode fixing plate toward the front.
14) Push the electrode fixing plate lightly into direction of A, and release it.
15) Push the electrode fixing plate into direction A until line D of the electrode fixing plate is opposite mark C of the container, which in turn is found opposite of line B of the electrode fixing plate; thereafter, fix it in place with a screw.

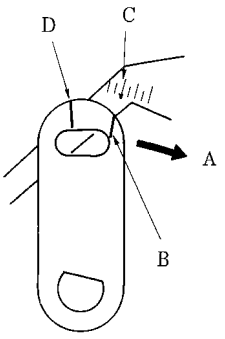

Figure 4-615

16) Mount the electrode plate toward the front; 1 screw.

Note:
Check that the electrode plate is in contact with the cylinder spindle and dust or foreign matter is not found in between.

17) Supply toner into the cylinder unit and toner sensor assembly of the black developing assembly as in installation work.
18) Mount the developing assembly cover (4 non-magnetic screws) and hand grip (1 self-tapping screw).

5. Attaching the Side Seal

1) Attach the end of side seal 1 aligning it with the extension of the curving surface of the container shown in Figure 4-616 and the end of the container shown in Figure 4-617.
2) Attach the end of side seal 2 about 1 mm away from the top surface of seal 1 shown in Figure 4-616 and aligning it with the end of the container shown in Figure 4-617; and fix it in place over the boss.

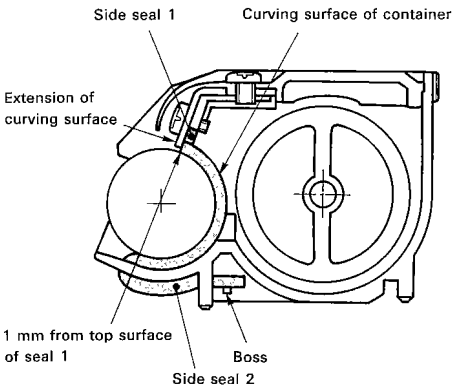

Figure 4-616

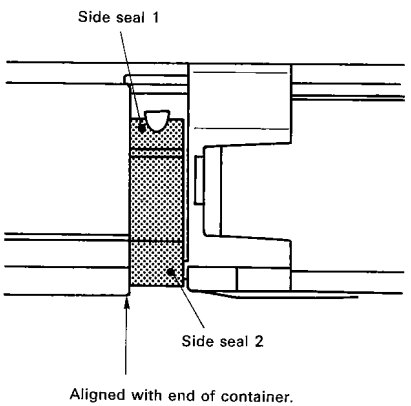

Figure 4-617

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B. CD Unit (NP-4835/4835i only)

1. Construction

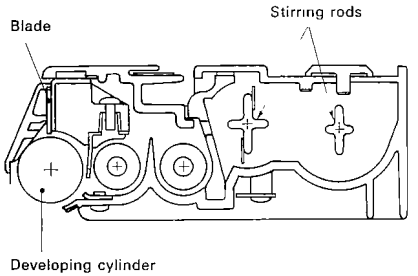

Figure 4-618

2. Replacing the Developing Cylinder and the Seal

- Do not touch or scratch the surface of the developing cylinder.
- Keep starter and toner ready in addition to the tool.

1) Place the CD unit on waste paper (newspaper).
2) Detach the hopper cover, starter cover, sleeve cover, and front cover shown in Figure 4-618a.

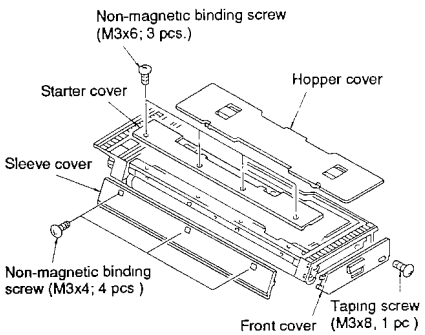

Figure 4-618a

3) Disconnect J852 (6-pin) from the PCB; then, loosen the PCB mounting screw (right), and detach left side.

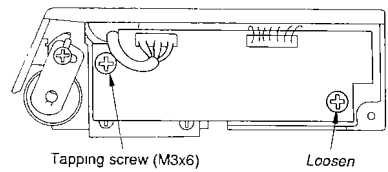

Figure 4-618b

4) Remove the three screws shown in Figure 4-618c, and detach the blade unit together with its mount.

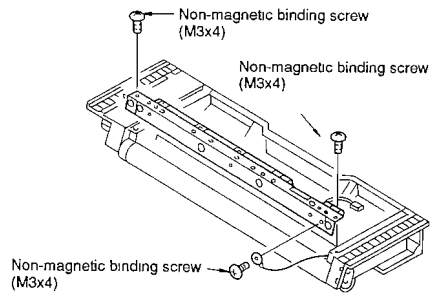

Figure 4-618c

5) Empty the CD unit on waste paper (newspaper).

6) Remove the screw, and detach the grounding wire and the polarity orientation plate.

Note:
Take care not to rotate the polarity orientation plate.

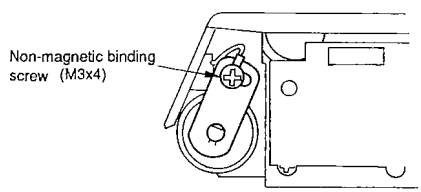

Figure 4-618d

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7) Remove the grip ring, and detach the roll and the bearing.

Note:
Make sure the roll rotates smoothly after attachment.

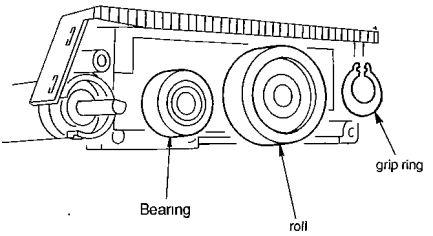

Figure 4-618e

8) Remove the two grip rings, and detach the two gears and the roll.

Note:
Make sure the roll rotates smoothly after attachment.

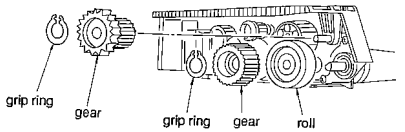

Figure 4-618f

9) Remove the two screws, and detach the bias plate and the bearing.

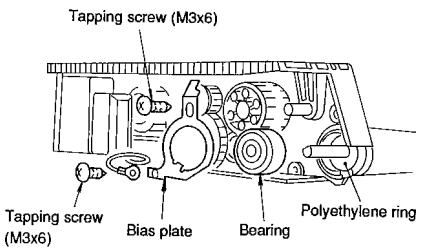

Figure 4-618g

10) Hold the shaft at both ends of the developing cylinder, and detach the developing cylinder.

Note:
When inserting the cylinder into the holder, take care not to bend the polyethylene ring to be attached to the cylinder; see Figure 4-618g.

11) Place the CD unit upside down on waste paper (newspaper), and tap its bottom lightly to empty it.

12) Remove the toner and the starter from the CD unit using a vacuum cleaner.

13) Clean the surface of the developing cylinder using alcohol solution.

Note:
If the seal is not to be replaced, skip steps 14) through 19).

14) Remove the seals (front, rear).
15) Clean the sections over which the seals were attached using alcohol solution.
16) Attach the new seals making sure that marks A and B are matched with the curvature (R) of the holder as in Figure 4-618h; check that the angular hole of the seal holds the angular boss behind the holder.

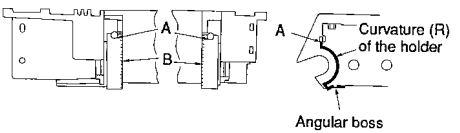

Figure 4-618h

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17) Hold the shaft of the developing cylinder, and force the developing cylinder against the seal to ensure firm contact.

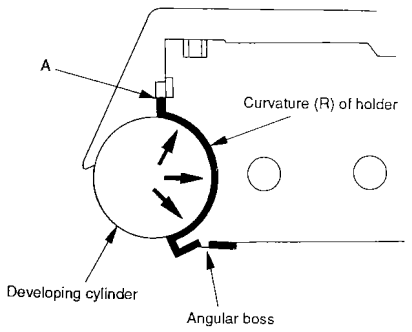

Figure 4-618i

18) Attach the developing cylinder by reversing steps 7) through 10).
19) Fit the polarity orientation plate over the shaft of the developing cylinder.

20) Push the polarity orientation plate into the direction of the arrow, and fix it in place using two screws.

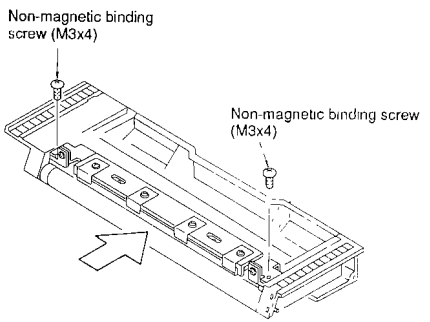

Figure 4-618j

21) Move the polarity orientation plate left and right; be sure to feel a click.

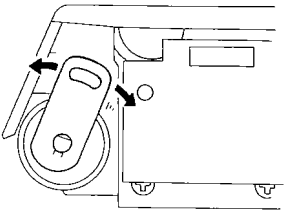

Figure 4-618k

22) Push the polarity orientation plate with fingers, and fix it in place together with the grounding wire using a screw.

Note:
Hold only the flat portion of the plate.

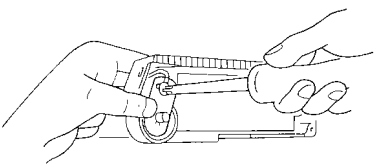

Figure 4-618l

23) Remove the polarity orientation plate.
24) Loosen screws A (3 pcs.) of the blade unit removed in step 4); push the blade unit into the direction of the arrow, and fix it in position using screws B (2 pcs.).

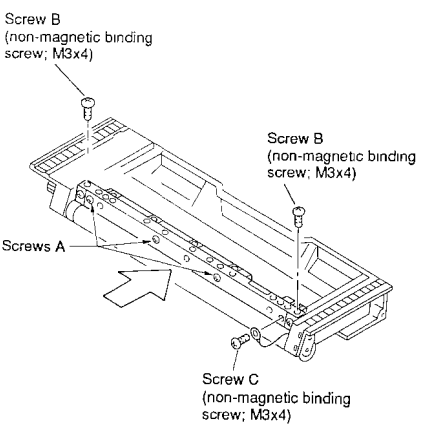

Figure 4-618m

25) Tighten screw C temporarily; while pushing the blade lightly against the cylinder, tighten screws A and screws C in order starting at the rear (Figure 4-618m).
26) Make sure that the side spacer is in contact with the cylinder (Figure 4-618n); further, make sure that an even gap is present between the blade and the cylinder.

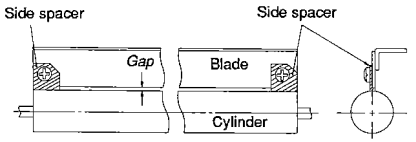

Figure 4-618n

27) Attach the hopper cover, sleeve cover, and front cover detached in step 2).

Note:
Do not attach the starter cover.

28) Install the CD unit using the CD UNIT INSTALLATION PROCEDURE with fresh starter.

3. Adjusting the Position of the Color Toner Supply Solenoid (SL3)

Move the slide plate into direction A until it stops and, while in this orientation, move the solenoid into direction A until it stops. Fix the solenoid in place.

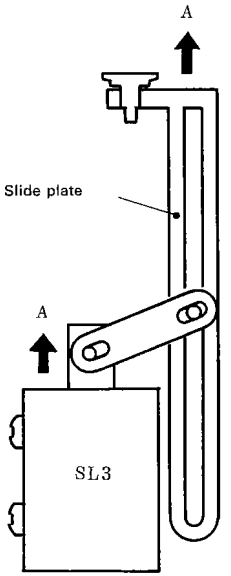

Figure 4-619

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VII. FIXING SYSTEM

A. Fixing Assembly

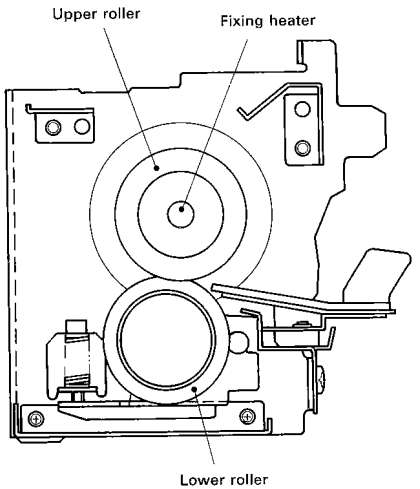


Figure 4-700 Cross Section of Fixing Assembly

1. Pressurization Mechanism

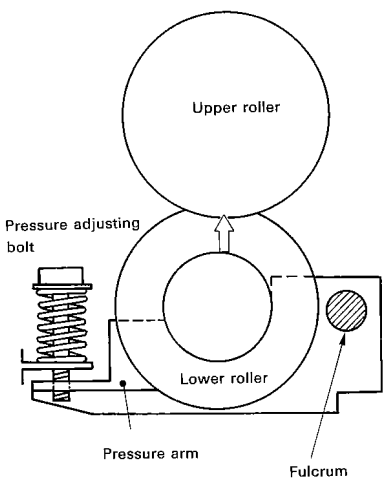


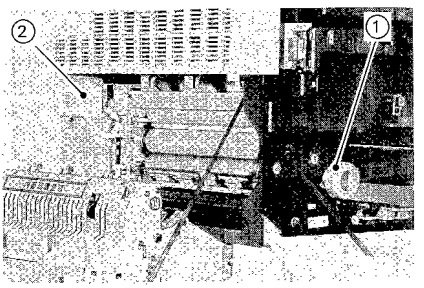
Figure 4-701

The position of the pressure arm shown in Figure 4-701 is moved by turning the pressure adjusting bolt found at the front and rear of the fixing assembly.

The lower roller moves to the direction of the arrow when the pressure adjusting bolt is turned clockwise, and the roller pressure increases.

2. Removing the Fixing Assembly from the Copier

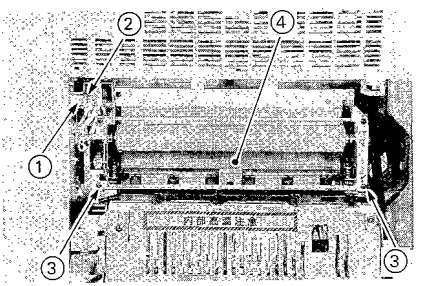
1) Open the front door.
2) Open the delivery unit.
3) Remove the knob of the fixing assembly; 1 screw, 1 washer.
4) Remove the connector cover; 1 screw.



① Knob ② Connector cover

Figure 4-702

5) Remove connector J11 (3P) and J2 (2P).
6) Remove the two screws, and pull out the fixing assembly.



① J11 ③ Screw
② J2 ④ Fixing assembly

Figure 4-703

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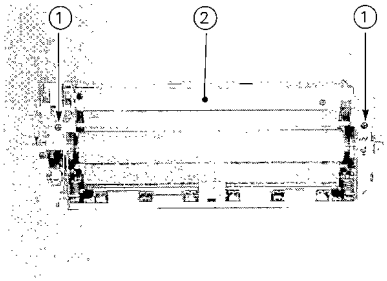
3. Removing the Heater, Upper Roller, and Lower Roller

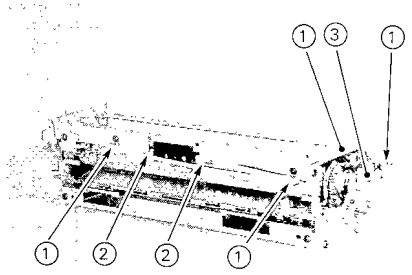
1) Remove the fixing assembly.
2) Remove the two screws, and remove the fixing assembly cleaning unit.



① Screws
② Fixing assembly cleaning unit

Figure 4-704

3) Remove the four harness stoppers; 1 screw each.
4) Pull out the two fastons from the thermoswitch.
5) Remove the heater fixing plate (2 screws), and pull out the heater.

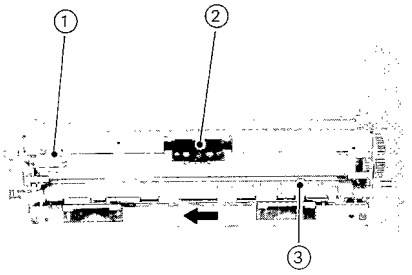


① Harness stoppers
② Fastons
③ Heater fixing plate

Figure 4-705

Note:
Make sure that the connector is toward the front when mounting the heater.

6) Remove the thermistor and thermoswitch; 1 screw each.
7) Remove the paper guide into the direction of the arrow while shaking it lightly.

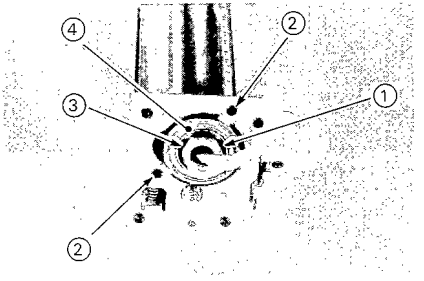


① Thermistor
② Thermoswitch
③ Paper guide

Figure 4-706

8) Remove the C-ring and two bearing stoppers (1 screw each) on the front, and remove the bearing together with the insulation bushing.

Note:
The insulation bushing is fragile; take care in handling it.



① C-ring
② Bearing stoppers
③ Insulation bushing
④ Bearing

Figure 4-707 Front Side

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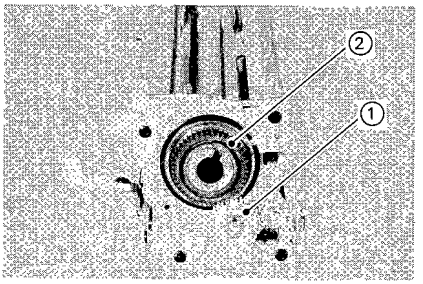
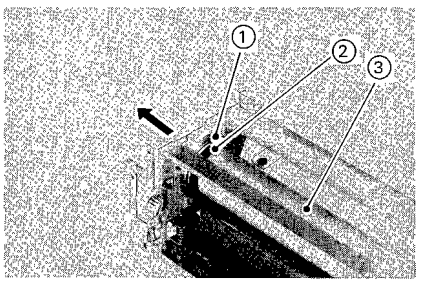
9) Remove the gear at the rear; 1 grip ring.
10) Remove the roller spindle gear; 1 E-ring.



① Gear
② Roller spindle gear

Figure 4-708 Rear Side

11) Remove the bushing and insulation bushing at the front, and pull out the upper roller while pushing it down on the lower roller.



① Bushing
② Insulation bushing
③ Upper roller

Figure 4-709

12) Lift the lower roller from the bushing, and remove it.

4. Mounting the Heater

- Do not touch the surface of the heater.
- Mount it so that the connector is at the rear.

5. Mounting the Upper Roller

Mount it so that the end with a cut is at the rear.

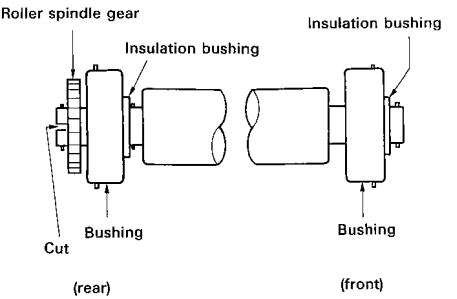


Figure 4-710

6. Mounting the Thermistor and Thermoswitch

Check that the detection surface of the thermistor and thermoswitch is in uniform contact with the surface of the upper roller.

7. Adjusting and Measuring the Nip

a. Adjustment (tightening the pressure adjusting bolt)
If the width of the nip is within the values shown in Table 4-700, leave out the adjustment; otherwise, correct it with the pressure adjusting bolt.

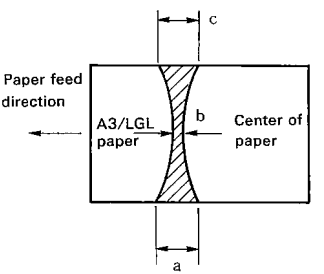


Figure 4-711

Note:
a and c are values (10 mm) at both ends.

Dimension	Measured when upper and lower rollers are hot.
b	5.3 ±0.3 [mm]
|a − c|	0.5 mm or less

Table 4-700

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b. Measurement

If the roller is cool, turn the copier ON. wait until the warm-up is complete; wait a further 15 minutes, make 20 copies, and take measurements.

Procedure

1) Open the copyboard cover, and take an A3/LGL solid black copy.
2) Turn the copier OFF as soon as the leading edge of the copy paper comes out into the copy tray, and open the front door and delivery unit.
3) Turn the fixing assembly knob clockwise slightly, keep the copy paper at the position for 15 seconds, and turn the fixing assembly knob to remove the copy paper from the fixing assembly.
4) Measure the width of the section shown in Figure 4-711; the toner should look shiny over the section.

8. Position of the Paper Guide

The paper guide can be removed by pulling it to the front. it can be mounted by performing the procedure in reverse. As such, the position of the paper guide does not have to be adjusted.

Note:
If the paper guide plate is removed, the position of the paper guide needs to be adjusted. For this reason, the fixing screw of the paper guide plate should not be loosened; otherwise, be sure to mark the fixing assembly stand with a pen.

Note:
To adjust the position of the paper guide, place the fixing unit on a desk with a washer 1 mm in thickness in between. Move the paper guide stand so that the distance from the desk is about 46 mm as shown in Figure 4-712.

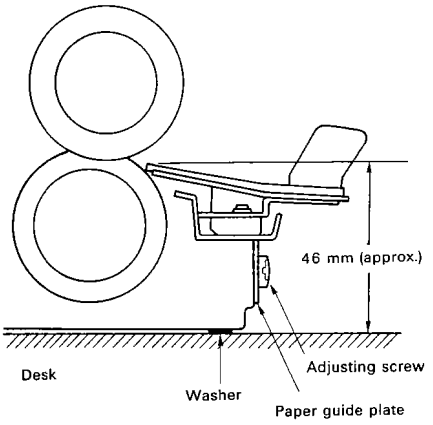


Figure 4-712

9. Lubrication

Apply heat-resisting grease (CK-0427) over the following:

- Gear engagement (rear)
- Gear engagement (front) of fixing assembly knob

B. Fixing Assembly Cleaning Unit

1. Outline

The fixing assembly cleaning unit is located above the fixing assembly. Its cleaning belt is impregnated with silicone oil and is kept in contact with the upper roller to clean the surface of the upper roller.

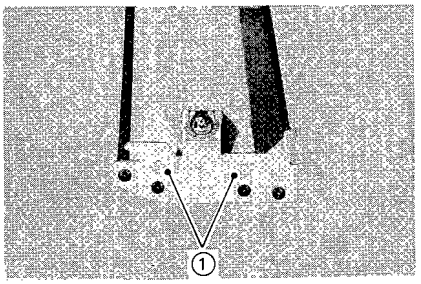
The belt is 15 m in length, and a red strip comes into view when it is 2.5 m or less in length.

> Be sure to clear the 'BELT' (counter mode in the service mode) after replacement of the cleaning belt. (see page 3-148)

2. Disassembly and Assembly

a. Removing the Cleaning Belt

1) Remove the fixing assembly.
2) Remove the mounting screw, and remove the fixing assembly cleaning unit. (See Figure 4-704.)
3) Remove the two bushings of the fixing assembly cleaning unit (1 screw each), and remove the cleaning belt.



① Bushing

Figure 4-713

b. Mounting the Cleaning Belt

The service parts comprised in the cleaning belt are lead-out spindle, take-up spindle, and cleaning belt. All these parts are designed as a single unit.

To mount the cleaning belt, perform its removal procedure in reverse with the following in mind.

- Wind the cleaning belt around the take-up spindle two to three times. Check that the section coming into contact with the roller is impregnated with oil.

> Check that the cleaning belt is not askew and is free of slacks or wrinkles.

c. Position of the Cleaning Belt Drive Solenoid (SL2)

Mount the solenoid so that the section shown in Figure 4-714 is 0.3 ±0.1 mm when the lever is shifted to direction A.

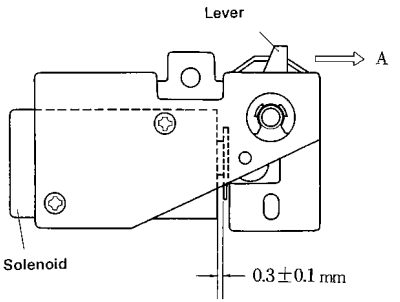


Figure 4-714

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VIII. ELECTRICAL SYSTEM

A. DC Controller

The DC controller is equipped with a built-in battery (BAT101) and an external battery. Take note of the following, as shorting both ends of the battery can result in heating.

1. Removal of DC Controller

- Remove it together with the shield plate.
- Do not remove connector J115 (exterior battery); otherwise, the date data may be lost.

2. Replacement of DC Controller

- Keep the DC controller mounted on the shield plate when shipping it to the workshop or factory. Use a conductive bag with a transparent side. Put the DC controller in the bag so that its face shows through the bag.
- After replacement, reset the adjustment values of the service mode and user mode settings.

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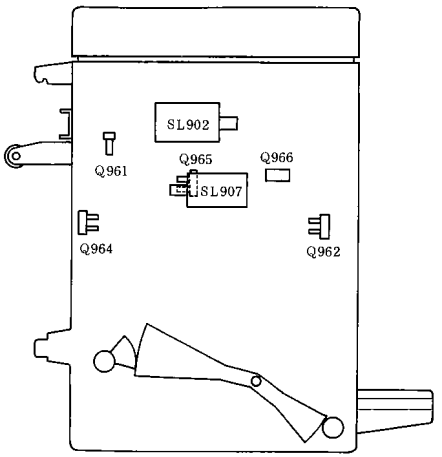
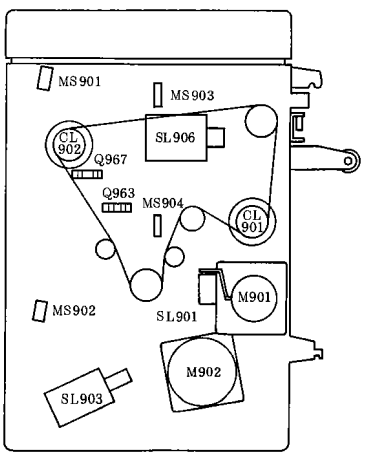
IX. CD UNIT CHANGER (NP-4835/4835i only)

A. Outline



Q961: CD unit horizontal home position detection
Q962: CD unit horizontal move detection right
Q964: CD unit horizontal move detection left
0965: CD unit move release detection
Q966: CD unit claw release detection
SL902: CD unit claw release solenoid
SL907: CD unit move release solenoid

Figure 4-900 Front View



Q963: CD unit vertical move home position detection
Q967: CD unit claw release detection left
MS901: CD unit door detection
MS902: Manual feed door detection
MS903: Upper limiter
MS904: Lower limiter
M901: Vertical move motor
M902: Horizontal move motor
SL901: Vertical motor lock solenoid
SL903: Manual feed switch solenoid
SL906: CD unit move solenoid
CL901: CD unit move-in clutch
CL902: CD unit move-out clutch

Figure 4-901 Rear View

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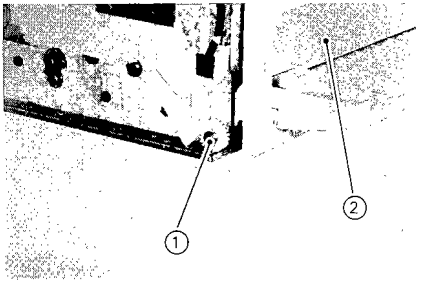
B. Removing the Manual Feed Unit

1) Open the CD unit door and manual feed door, and remove the front cover (2 screws) and rear cover (3 screws).
2) Remove the gear; 1 grip spring.

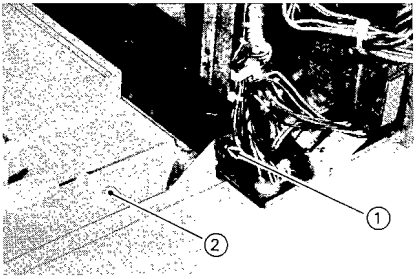
Note:
Keep the manual feed door closed when mounting the gear.



① Gear ② Manual feed door

Figure 4-902

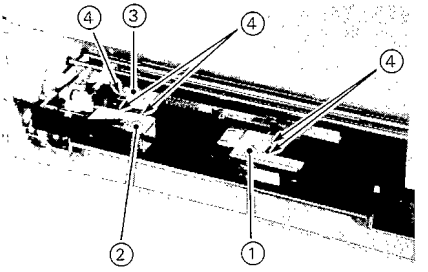
3) Remove the stepped screw, and remove the manual feed door.



① Stepped screw ② Manual feed door

Figure 4-903

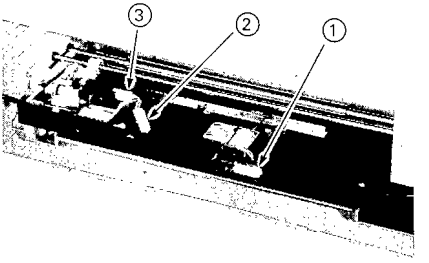
4) Remove the CD unit changer from the copier. (See p. 4-45.)
5) Remove the manual feed shutter solenoid cover (2 screws) manual feed roller solenoid cover (2 screws), and manual feed paper detection cover (1 screw).



① Manual feed shutter solenoid cover
② Manual feed roller solenoid cover
③ Manual feed paper detection cover
④ Screws

Figure 4-904

6) Remove connectors J10 (2P), J9 (2P), and J1 (3P).



① J10 ③ J1
② J9

Figure 4-905

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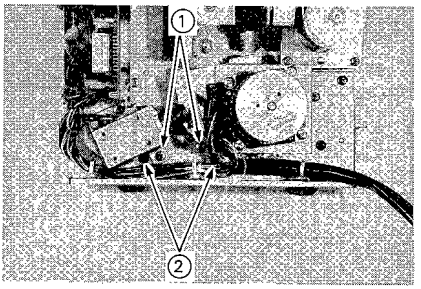
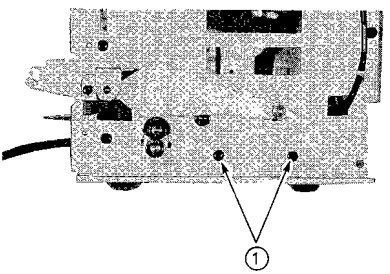
7) Loosen two screws A shown in Figure 4-906.
8) Remove four screws B, and pull out the manual feed unit.



① Screws A ② Screws B

Figure 4-906 Rear



①Screws B

Figure 4-907 Front

C. Removing the CD Unit Changer

1) Remove the rear cover of the copier.
2) Remove the connector (15P).

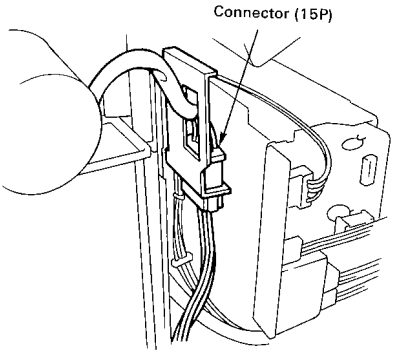


Figure 4-908

3) Remove the fixing plate of the hook at the upper rear.

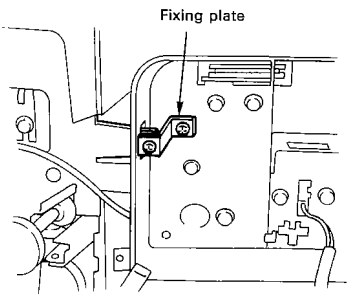


Figure 4-909

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4) Remove the fixing plate of the hook on the lower front.

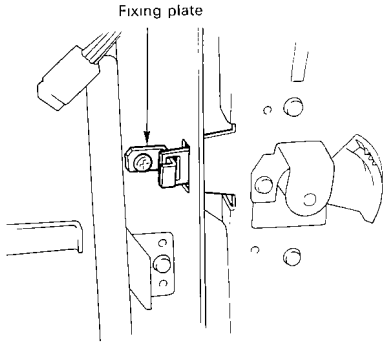

Figure 4-910

5) Hold the CD unit changer at the bottom of the front and rear covers, and remove it.

1 Lift the bottom of the front and rear covers.
2 Keep the relay harness from getting trapped.
3 Place the gear spindle of the CD unit changer over the rail of the copier.
4 Fit the hook of the CD unit changer on the side plate of the copier.

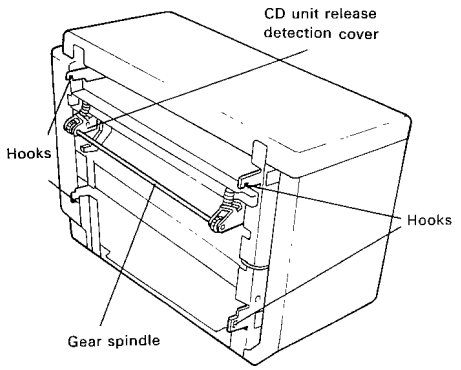

Figure 4-911

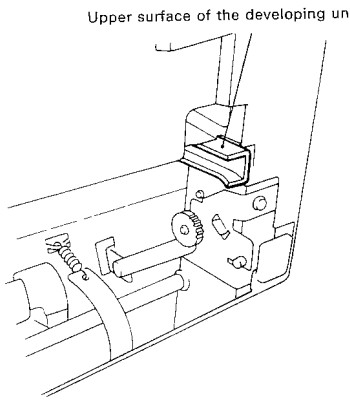

Figure 4-912

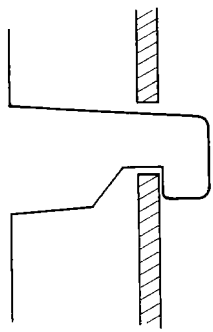

Figure 4-913

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X. CASSETTE FEEDING UNIT

A. Removing the Copier from the Cassette Feeding Unit

1) Remove the rear cover of the copier.
2) Open the right door of the cassette feeding unit, and lock the drive gear with the stopper.

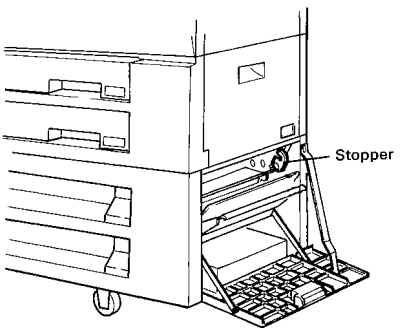

Figure 4-1001

3) Remove the screw, and remove the face plate.

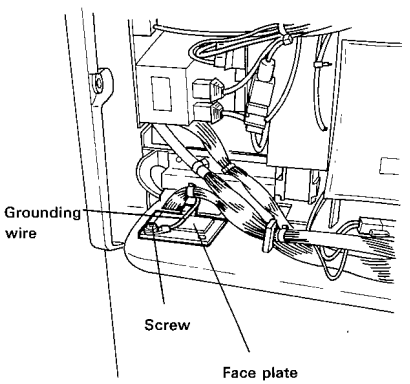

Figure 4-1002

4) Remove the harness from the two wire saddles, and remove J104 and connector (3P) from the DC controller PCB.

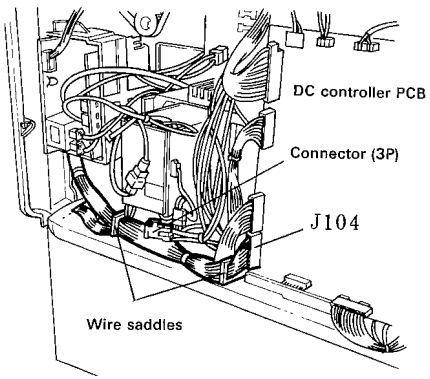

Figure 4-1003

5) Pull out the stop pin fitted on the positioning pin (rear).

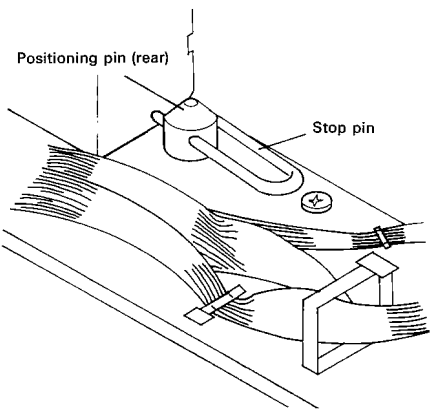

Figure 4-1004

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6) Pull out the four handles from he copier.
7) Lead the harness through the hole in the face plate removed in step 3), and remove the copier from the cassette feeding unit.

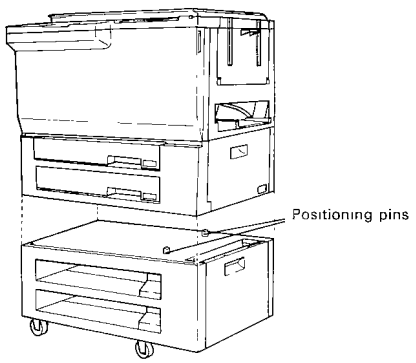


Figure 4-1005

8) Turn over the face plate, and mount it on the copier with a screw.

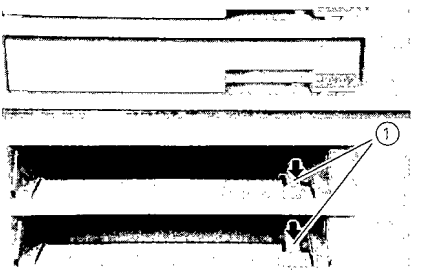
Keep the stop pin. It will be used when mounting the copier on the cassette feeding unit.

B. Pick-Up Unit of Cassettes 3 and 4

1) Remove the rear cover of the copier.
2) Remove cassettes 3 and 4 from the copier.

Note:
Do not attempt to remove the pick-up unit with cassettes set in the copier. The lifter will hinder the removal of both cassettes and pick-up unit.

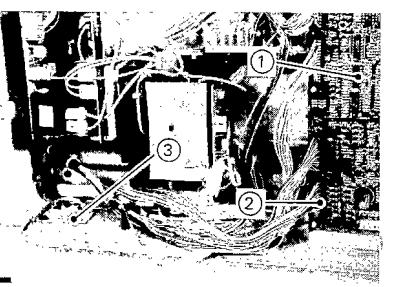
3) Push the lifter release arm into the direction of the arrow, and lower the lifter.



① Lifter release arm

Figure 4-1006

4) Remove J104 and connector (3P) from the DC controller.
5) Remove the face plate; 1 screw.



① DC controller ③ Face plate
② J104

Figure 4-1007

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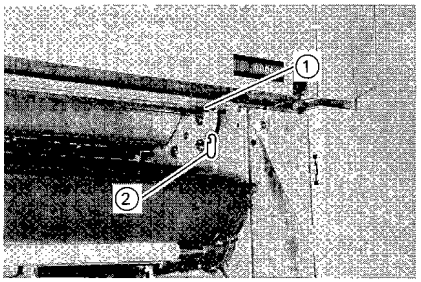
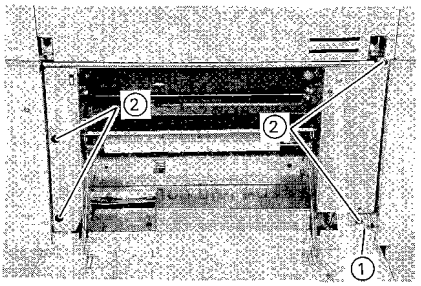
6) Open the lower right door, and pull out the connector.
7) Lock the drive gear with the stopper.



① Drive gear ② Stopper

Figure 4-1008

8) Remove the pick-up unit of cassettes 3 and 4; 4 screws.



① Connector ② Screws (4)

Figure 4-1009

3. Removing the Pick-Up Roller of Cassettes 3 and 4

- Perform the procedure for cassettes 1 and 2.

4. Removing the Separation/Feeder Roller of Cassettes 3 and 4

- Perform the procedure for cassettes 1 and 2.

5. Mounting Pick-Up Drive Switch Solenoid 2 (SL805)

- Perform the procedure for the pick-up drive switch solenoid (SL6).

6. Mounting Pick-Up Roller Release Solenoid 2 (SL804)

- Perform the procedure for pick-up roller release solenoid 1 (SL7).

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XI. PAPER DECK VIII

A. Construction

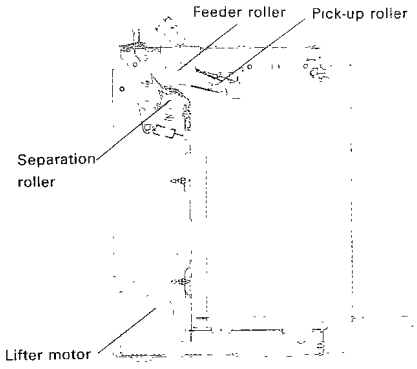

Figure 4-1100 Cross Section

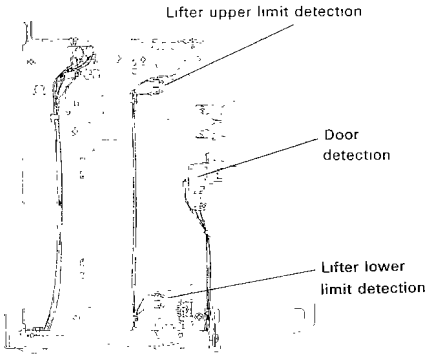

Figure 4-1101 Front View

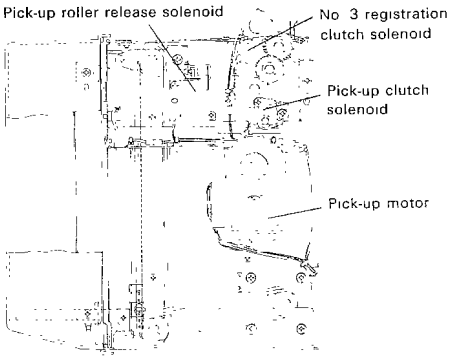

Figure 4-1102 Rear View

B. Removing Paper Deck VIII

1) Remove the paper deck cover; 1 screw.

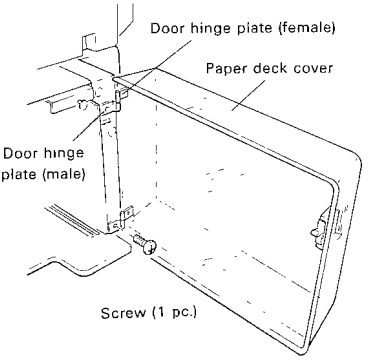

Figure 4-1103

2) Remove the rear cover; 2 screws

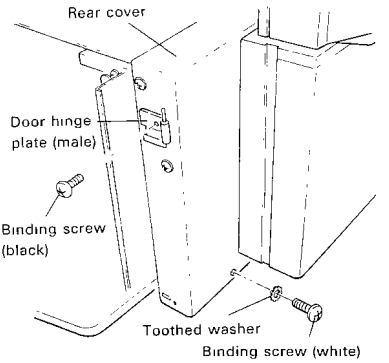

Figure 4-1104

3) Remove the front cover; 2 screws.

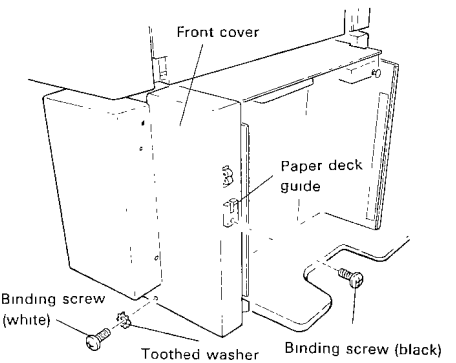

Figure 4-1105

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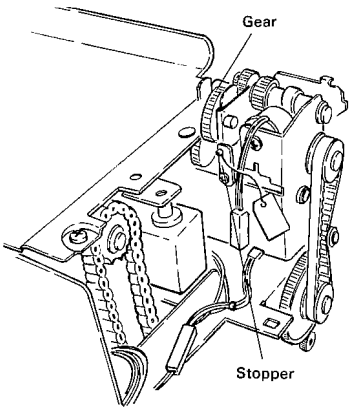

Figure 4-1106

5) Remove the rear cover of the copier.
6) Remove the face plate; 1 screw.

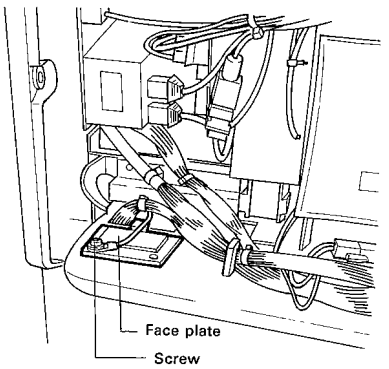

Figure 4-1107

7) Pull out J104 and connector (3P) from the DC controller.
8) Remove the harness from the wire saddles; the harness is from the paper deck.

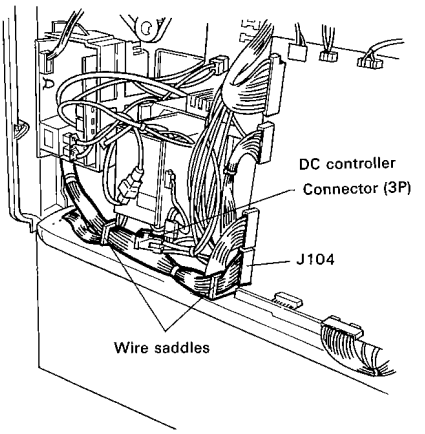

Figure 4-1108

9) Remove the four screws holding the paper deck on the copier.
10) Lead the harness from the paper deck through the hole in the face plate, and remove the paper deck from the copier.

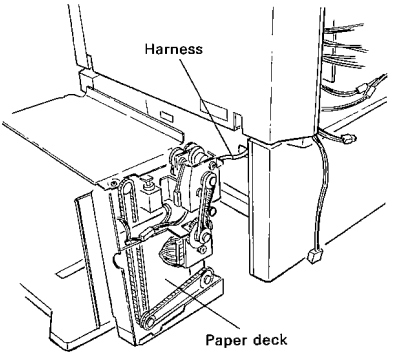

Figure 4-1109

11) Turn over the face plate, and mount it on the copier with a screw.

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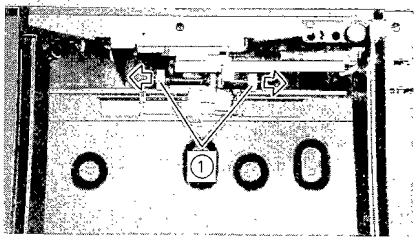
C. Removing the Pick-Up Roller

1) Pull out the pick-up roller into the direction of the arrows.



① Pick-up roller

Figure 4-1110

Note:
The pick-up roller has its own orientation; attach it as shown in Figure 4-1110A.

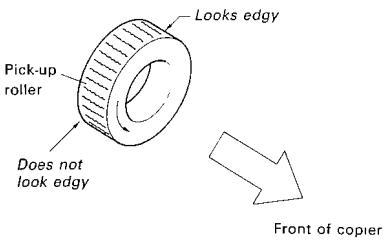
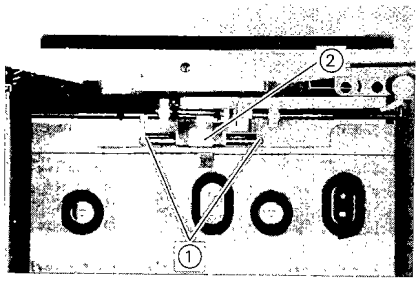


Figure 4-1110A

D. Removing the Separation and Feeder Rollers

1) Remove the two stop rings, and pull out the separation rollers with its collar.
2) Remove the separation rollers from its collar.



① Stop rings ② Collar of separation roller

Figure 4-1111

Note:
The separation roller is designed to rotate in certain direction only. In mounting the separation roller, make sure that the mark shown in Figure 4-1112 is toward the front of the paper deck.

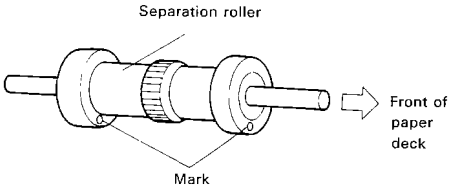


Figure 4-1112

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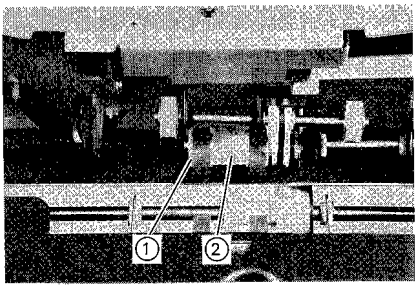
3) Remove the stop ring, and pull out the feeder rollers with its collar.
4) Remove the feeder rollers from its collar.



① Stop ring ② Collar of feeder roller

Figure 4-1113

Note:
The feeder roller is designed to rotate in certain direction only. In mounting the feeder roller, make sure that the mark on the feeder roller is toward the rear of the paper deck.

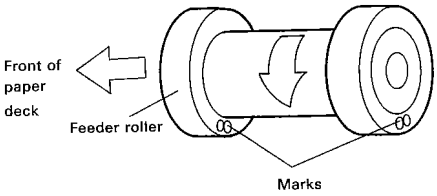


Figure 4-1114

E. Mounting the Door Detection Switch

1) Adjust the position of the microswitch mounting plate so that the microswitch (MS2) is turned ON when the paper cover is closed.

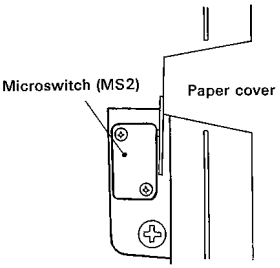


Figure 4-1115

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I. LOCATION

The location of the copier should be chosen based on the following considerations. If possible, make a visit to the customer for a study of the site before delivery of the copier.

- The ambient temperature should be between 7.5°C and 32.5°C and the humidity, 10% to 85%. Avoid locations near water faucets, humidifiers, water boilers, and refrigerators.
- Avoid locations near open fire or subject to dust or ammonia fumes and direct rays of the sun. Provide curtains over the windows if necessary.

> Installation at a location subject to direct rays of the sun can hinder normal operation of AUTO PAPER SELECTION or AUTO REPRODUCTION SELECTION.

- Choose a well-ventilated location.
- Make sure all feet of the copier will be in contact with the floor.
- Allow at least 10 cm from any wall to provide access.

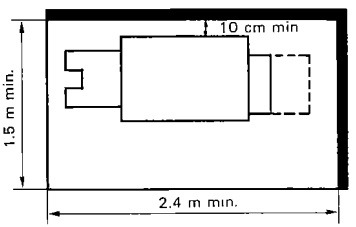

Figure 5-1

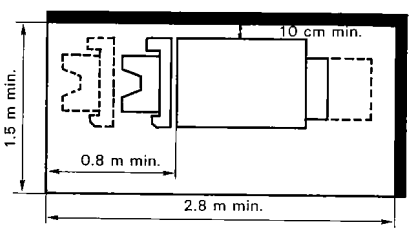

Figure 5-2 Sorter

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II. UNPACKING AND INSTALLATION

When a piece of metal is moved from a cold place to a warm place, droplets of water form on its surface. This phenomenon is known as condensation. Condensation affects the performance of machines. The simplest way to eliminate condensation from the copier, any machines for that matter, is to leave it alone until it warms to room temperature (at least one hour).

■ NP-4835/4835i

Step	Procedure	Checks	Remarks
1	Open the carton containing the copier.		
2	Pull out the four handles of the copier. Hold the handles, and lift and place the copier on the pedestal.		
3	Open the carton containing parts and consumables.		
4	Remove the tape and fixing members and screws.		See Figures 5-3, -4, and -5. Do not remove screws without a tag.
5	Release the feeder unit, remove the mounting screw, and take out the dummy drum.		See Figure 5-6. Keep the screws for mounting of the drum unit.
6	Clean the two dust-proofing glass sheets with dry lint-free paper.		
7	Open the hopper, and open the toner supply cover.		See Figure 5-7.
8	Remove the screw, and pull out the shutter.		See Figure 5-7.
9	Add black toner.		
10	Push in the shutter, remove the cartridge, and close the toner supply cover.		
11	Close the hopper, pull out the shutter, remove the connector and upper stopper plate (1 screw), and remove the hopper.		See Figure 5-8.
12	Remove the connector and mounting screw, and remove the black developing assembly.		See Figure 5-9.
13	Remove the lid from the black developing assembly.		See Figure 5-10.
14	Scoop up four cupfuls of black toner from the hopper, and put the toner into the black developing assembly. Mount the lid.	Be sure to pour the toner (3 cupfuls) evenly over the developing cylinder, and put the remaining toner (1 cupful) over the toner sensor.	See Figure 5-11. (150 g)

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Step	Procedure	Checks	Remarks
15	Install the drum unit, and fix it in position with the screw removed in step 5).	• The drum separation claw is released automatically in response to insertion of the drum unit. Keep away from the drum separation claw. • After installing the drum unit, check that the drum separation claw is in contact with the drum.	Take care when handling the drum unit. Avoid damaging its surface.
16	Install the black developing assembly on the copier.		• 1 screw • 1 connector
17	Remove the primary and separation/transfer corona units, and clean the corona wires. Install them back on after cleaning.		Set the feeder unit after cleaning.
18	Clean the corona wire of the pre-transfer corona units, and set the unit inside the copier.		
19	Remove the rear panel, and connect the connector for the date battery.	Check that all gears, sprockets, pulleys, and connectors are mounted properly.	See Figure 5-12.
20	Connect the power plug into a power outlet, and switch the power switch to 'I'.	• Press the number and STOP/CLEAR keys to check that the copy count is correct. • Press other keys also, and check all operate properly.	
21	Set copy paper in the cassette, and insert the cassette into the copier.		
22	After the copier has warmed up, set a Test Sheet on the copyboard, and make a copy.	Check that the operation is free of abnormal sound.	
23	Install a CD unit.		See "CD UNIT INSTALLATION PROCEDURE."
24	Install the hopper.		• Mount the upper stop plate (1 screw). • Push in the shutter (1 screw). • Connect the connectors.
25	Check that the copy image and copy operation are proper.	• Black copy • Color copy • Two-sided copy • Overlay copy • Manual feed copy	Otherwise, make adjustments according to the "Basic Procedure for Image Adjustment."
26	Make settings for the asterisk mode and USER OPTION to suit the user's needs.	• Daily off • Auto-clear time • Time	User the service mode (* 5 *) in setting the USER OPTIONs.
27	Mount the copyboard, rear panel, and copy tray.		

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Step	Procedure	Checks	Remarks
28	Check that all exterior covers are free of scratches and deformations.		
29	Clean up the area around the copier.		
30	Move the copier to its place of installation.	Check that the copier is level.	
31	Enter necessary information on the Service Sheet.		

※ See Note on page 5-6

■ NP-4835S/4335

Step	Procedure	Checks	Remarks
1	Open the carton containing the copier.		
2	Pull out the four handles of the copier. Hold the handles, and lift and place the copier on the pedestal.		
3	Open the carton containing parts and consumables.		
4	Remove the tape and fixing members and screws.		See Figures 5-3, -4, and -5. Do not remove screws without a tag.
5	Release the feeder unit, remove the mounting screw, and take out the dummy drum.		See Figure 5-6. Keep the screws for mounting of the drum unit.
6	Open the hopper, and open the toner supply cover.		See Figure 5-7.
7	Remove the screw, and pull out the shutter.		See Figure 5-7.
8	Add black toner.		
9	Push in the shutter, remove the cartridge, and close the toner supply cover.		
10	Close the hopper, pull out the shutter, remove the connector and upper stopper plate (1 screw), and remove the hopper.		See Figure 5-8.
11	Remove the connector and mounting screw, and remove the black developing assembly.		See Figure 5-9.
12	Remove the lid from the black developing assembly.		See Figure 5-10.
13	Scoop up four cupfuls of black toner from the hopper, and put the toner into the black developing assembly. Mount the lid.	Be sure to pour the toner (3 cupfuls) evenly over the developing cylinder, and put the remaining toner (1 cupful) over the toner sensor.	See Figure 5-11. (150 g)

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Step	Procedure	Checks	Remarks
14	Install the drum unit, and fix it in position with the screw removed in step 5).	● The drum separation claw is released automatically in response to insertion of the drum unit. Keep away from the drum separation claw. ● After installing the drum unit, check that the drum separation claw is in contact with the drum.	Take care when handling the drum unit. Avoid damaging its surface.
15	Install the black developing assembly on the copier.		● 1 screw ● 1 connector
16	Remove the stepped screw, use the pressure lever to apply pressure to the black developing unit, and fit the stepped screw back in; then lock the pressure lever in position.		See Figure 5-11A.
17	Install the hopper.		● Mount the upper stop plate (1 screw). ● Push in the shutter (1 screw). ● Connect the connectors.
18	Remove the primary and separation/transfer corona units, and clean the corona wires. Install them back on after cleaning.		Set the feeder unit after cleaning.
19	Clean the corona wire of the pre-transfer corona units, and set the unit inside the copier.		
20	Remove the rear panel, and connect the connector for the date battery.	Check that all gears, sprockets, pulleys, and connectors are mounted properly.	See Figure 5-12.
21	Connect the power plug into a power outlet, and switch the power switch to 'I'.	● Press the number and STOP/CLEAR keys to check that the copy count is correct. ● Press other keys also, and check all operate properly.	
22	Set copy paper in the cassette, and insert the cassette into the copier.		
23	After the copier has warmed up, set a Test Sheet on the copyboard, and make a copy.	Check that the operation is free of abnormal sound.	
24	Check that the copy image and copy operation are proper.	● Black copy ● Two-sided copy ● Overlay copy ● Manual feed copy	Otherwise, make adjustments according to the "Basic Procedure for Image Adjustment."
25	Make settings for the asterisk mode and USER OPTION to suit the user's needs.	● Daily off ● Auto-clear time ● Time	User the service mode (✻5✻) in setting the USER OPTIONs.
26	Mount the copyboard, rear panel, and copy tray.		

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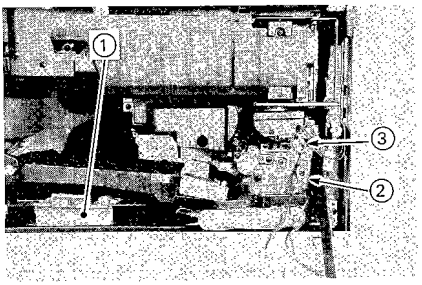
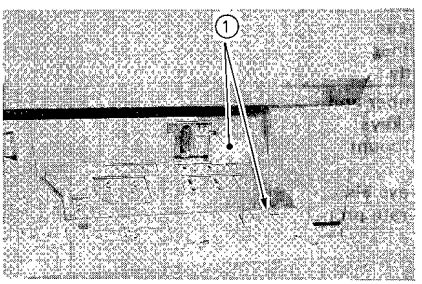
Step	Procedure	Checks	Remarks
27	Check that all exterior covers are free of scratches and deformations.		
28	Clean up the area around the copier.		
29	Move the copier to its place of installation.	Check that the copier is level.	
30	Enter necessary information on the Service Sheet.		



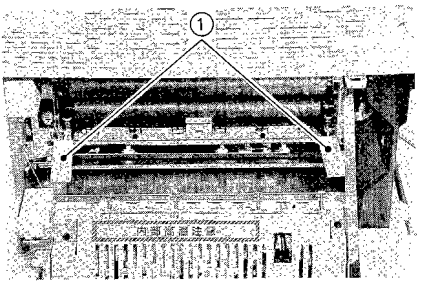
① Lower feeder unit fixing member
② Manual guide fixing screw
③ Black developing unit fixing screw

Figure 5-3



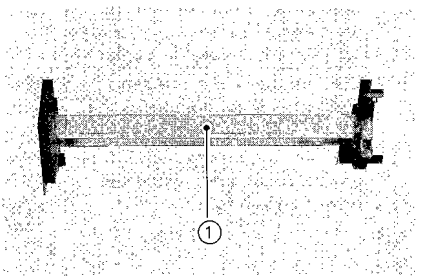
① Cassette center plate fixing members

Figure 5-4



① Fixing roller spacers

Figure 5-5



① Dummy drum

Figure 5-6

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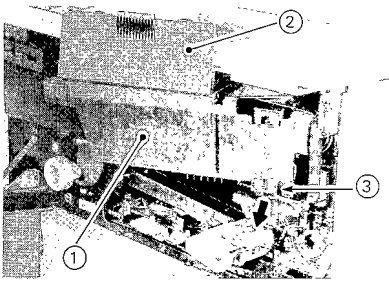
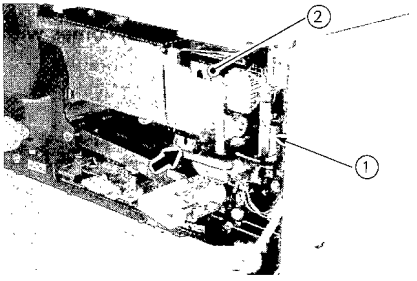


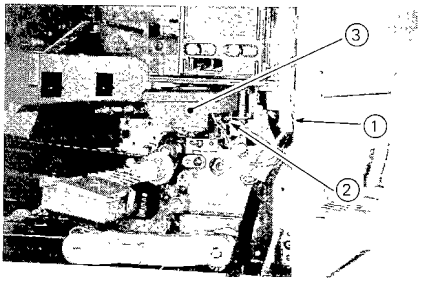
① Hopper
② Toner supply lid
③ Shutter

Figure 5-7



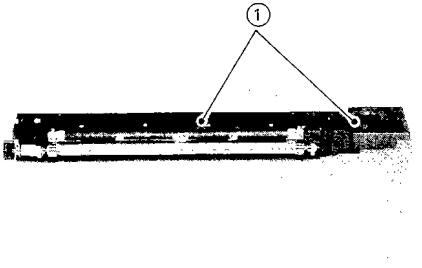
① Connector
② Upper stop plate

Figure 5-8



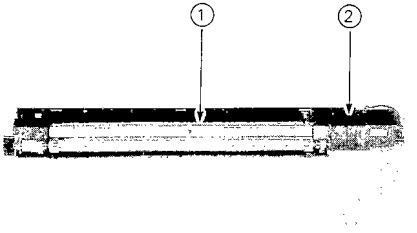
① Connector
② Screw
③ Black developing assembly

Figure 5-9



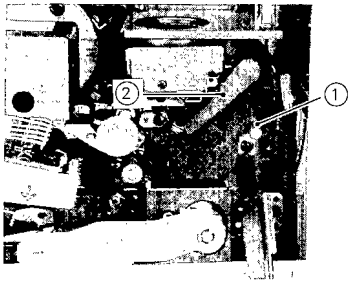
① Black developing lid

Figure 5-10



① Developing cylinder
② Toner sensor

Figure 5-11



① Stepped screw
② Pressure lever

Figure 5-11A

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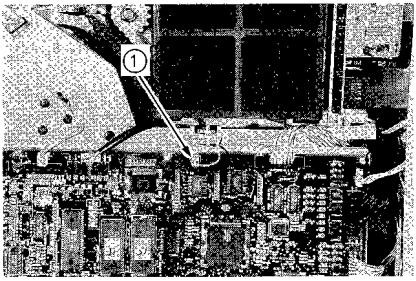

① Connector (J115)

Figure 5-12

Note:
If the image editing unit is installed in the NP-4835i, check that the add-on operating section of the image editing unit indicates "HIGHLIGHT" as shown in Figure 5-a.
If not, stick on the add-on operating section seal for the NP-4835i (Figure 5-a; comes with the copying machine).

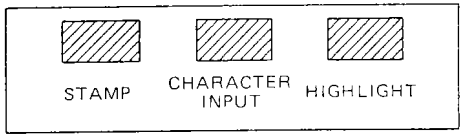

Figure 5-a

Add-on operating section seal for the NP-4835i

Part number	Language
F S8-8053	JAPANESE
F S8-8054	ENGLISH
F S8-8055	FRENCH
F S8-8056	GERMAN

Table 5-a

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III. RELOCATION OF COPIER

If the copier needs to be relocated by truck or other means of transportation, perform the following:

Step	Procedure	Note	Remarks
1	Remove the CD unit. (NP-4835/4835i only)	Keep the CD unit in a box for transport.	
2	Remove the drum unit.	Keep the drum unit in a box for transport.	
3	Fix the manual feed guide and black developing assembly with screws.		See Figure 5-3.
4	Mount the dummy drum.		
5	Tape the corona units, feeder unit release lever, and lower feeder unit release lever so that they will not be shaken out of place during transport.		
6	Tape the front door and delivery unit cover.		
7	Place an A3 sheet on the copyboard, and tape the copyboard cover.		

Note:
If the copier needs to be lifted for loading onto a truck not equipped with a lifter, detach the copier from the cassette feeding unit. (See p. 4-47.)

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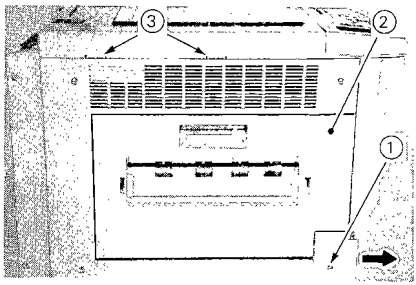
IV. INSTALLATION OF DOCUMENT TRAY

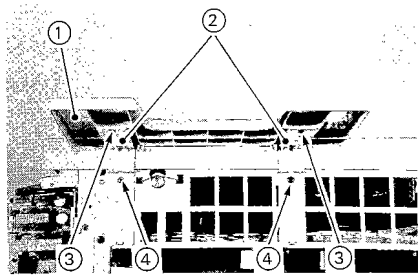
1) Remove the cassette, if any, from the copier.
2) Remove the screw from the lower front cover.
3) Move the lower front cover toward the front of the copier; remove the six screws, open the front door and delivery unit, and remove the left cover.
4) Cut off the two sections shown in Figure 5-13 with a nipper.



① Screw
② Delivery unit
③ Cut.

Figure 5-13

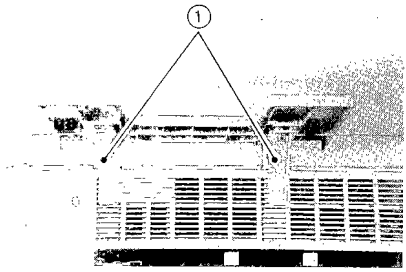
5) Mount the two fixing plate on the copyboard; 2 self-tapping screws.
6) Mount the document tray; 2 binding screws, black, M4 X 6.



① Document tray
② Fixing plate
③ Self-tapping screws
④ Binding screw

Figure 5-14

7) Mount the left and lower front covers.
8) Mount the two reinforcing plates; 4 binding screws, black M4 X 6.



① Reinforcing plates

Figure 5-15

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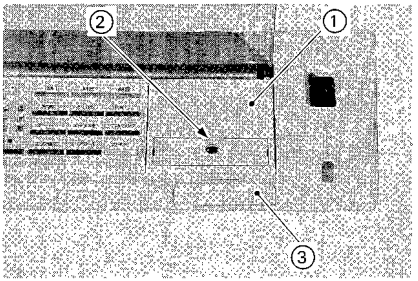
V. INSTALLATION OF CONTROL CARD V

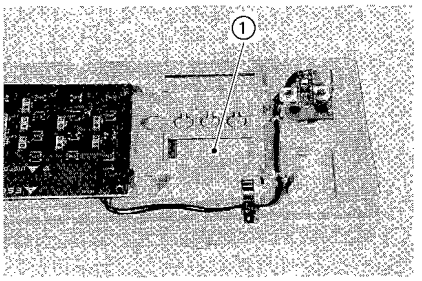
1) Open the front door, and remove the inside cover (right).
2) Remove the control panel. (See CHAPTER 4.)
3) Remove the transparent sheet from the memory memo sheet.
4) Remove the mounting screw from the face plate (top) under the transparent sheet.



① Face plate (top) ③ Face plate (side)
② Mounting screw

Figure 5-16

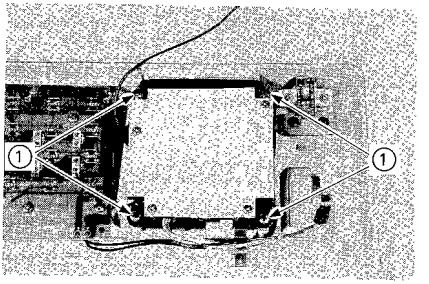
5) Turn over the control panel, and remove the face plate (side).
6) Remove the protection sheet over which the display of control card V is attached.
7) Place the transparent sheet over the hole in the display.



① Hole

Figure 5-17

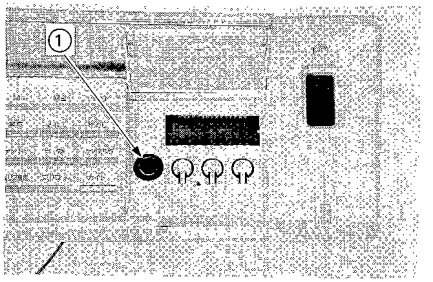
8) Fix control card V on the control panel with four mounting screws.
(Insert the card into control card V, and fix control card V at a point where insertion or removal of the card is smooth).



① Mounting screws

Figure 5-18

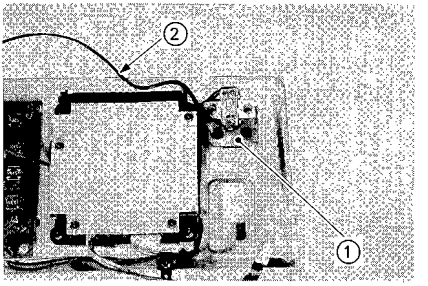
(Check that the connector for the printer is centered over the hole).



① Connector for printer

Figure 5-19

9) Fix the grounding wire of control card V on the mounting plate.



① Mounting plate ② Grounding wire

Figure 5-20

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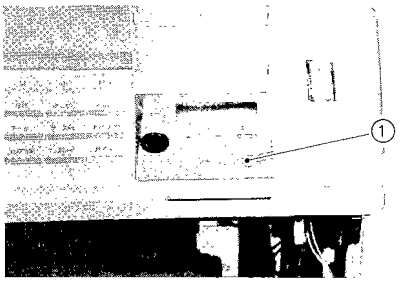
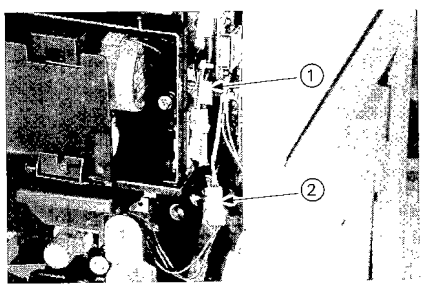
10) Remove the protection sheet from the nameplate (control panel) of control card V.
11) Attach the template (control panel) of control card V on the control panel of the copier.



① Template

Figure 5-21

12) Mount the control panel on the copier.
13) Attach the transparent sheet removed in step 3).
14) Pull out the shorting connector shown in Figure 5-22.
15) Connect the 4P connectors of control card V and the copier.



① 4P connector ② Shorting connector

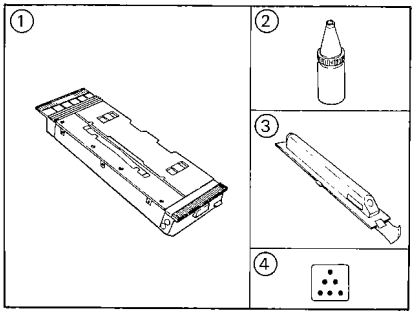
Figure 5-22

16) Turn the copier ON, and check the operation of control card V.
17) Mount the inside right cover.

VI. INSTALLATION OF CD UNIT (NP-4835/4835i only)

A. Unpacking

Unpack the shipping cartons, and make sure all the items shown in Figure 5-23 are available.



① CD unit	1 unit
② Starter developer	1 pc.
③ Toner cartridge	2 pcs.
④ Color toner label	1 pc.

Figure 5-23

B. Installation

1) Open the front door of the copier, remove the 2-pin connector, and pull out the shutter (1 screw). Remove the upper stopper (1 screw), and lift and remove the hopper.

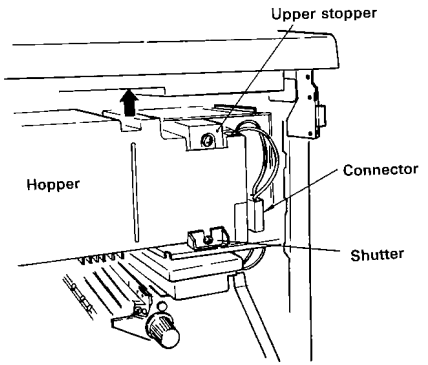


Figure 5-24

2) Insert the door switch actuator into the door switch, and turn the power ON.
- Skip steps 3) through 5) if the CD unit is meant for red other.

3) Remove the front cover of the CD unit (1 screw).

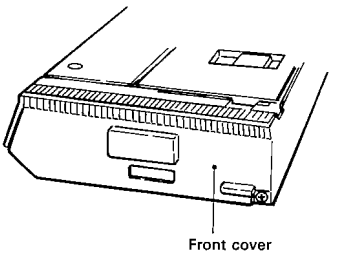


Figure 5-25

4) Cut off the lead wires, and remove the resistors (JP851 and JP852) from the PCB; see Table 5-1 for color reference.

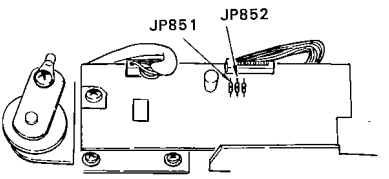


Figure 5-26

	JP851	JP852
Red	—	—
Blue	Cut	—
Green	—	Cut
Brown	Cut	Cut

Table 5-1

5) Mount the front cover back on the CD unit.

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6) Attach the color toner label.
If the copier is equipped with a CD unit changer, attach the CD unit detection label provided with the CD unit changer.
7) Remove the top cover of the CD unit (4 screws).

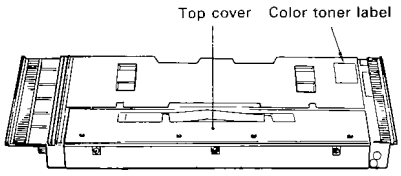

Figure 5-27

8) Shake the developer container lightly up and down about ten times.
9) Hold the developer container, and detach the funnel by turning it counterclockwise.

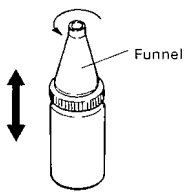

Figure 5-28

10) Peel the seal off the container.

Figure 5-29

11) Put the funnel back on the container.

12) Pour the developer into the developing cylinder of the CD unit.

Note:
Take care not to spill the developer; inadequate developer can result in foggy images.

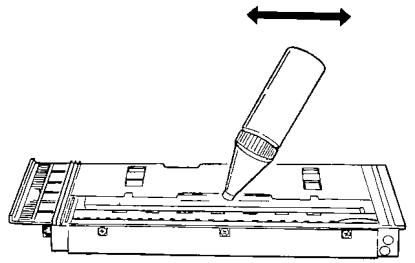

Figure 5-30

13) Put the top cover back on the CD unit.
14) Make sure that the copier is in its standby mode. If the copier is still warming up, wait until it enters the standby mode.
15) ■ If without CD unit changer
Open the CD unit door, and check if a CD unit is inside the copier. Remove the CD unit if found.
■ If with CD unit changer
- If a CD unit is inside the copier, remove it.
- If a CD unit whose toner is the same in color with that of the CD unit to be installed already exists inside the CD unit changer, remove the exiting CD unit.

① Press the CD UNIT SELECTION key on the control panel of the CD unit changer to select the CD unit to be removed.

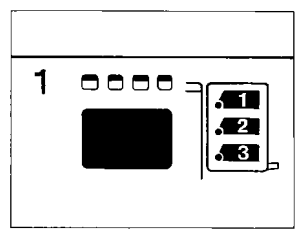

Figure 5-31

② Press the CD UNIT OUT key, and wait until the display stops flashing and remains lit.

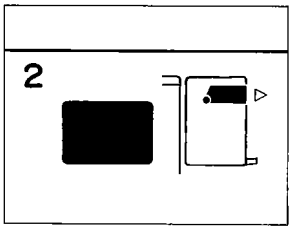

Figure 5-32

③ Open the CD unit door, and pull out the CD unit.

■ Step 16) is for copiers with a CD unit changer only.

16) Select the tier without a CD unit as in ① and ② of step 15).

17) Open the CD unit door, and place the CD unit on the grip.

18) Push the grip, and close the door.

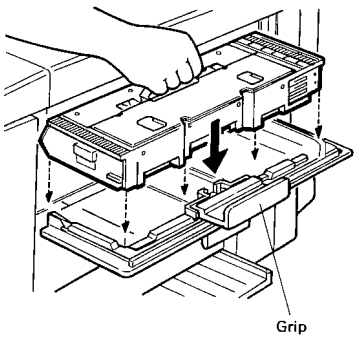

Figure 5-33

19) Press the service mode switch on the copier (SW501 on the laser controller PCB); use a hex key or the like.

- The copier enters the service mode and indicates 'S' on the message display (upper left).

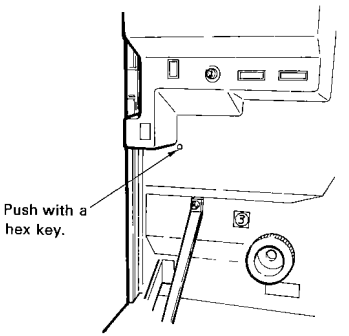

Figure 5-34

20) Press ✳ 4, and ✳ in sequence.

- Activates the function mode.

21) Press ↓ four times.

- 'CD-ROT' appears.

■ Steps 22) and 23) are for copiers with a CD unit changer only.

22) Press the COLOR SELECTION key on the copier to select the color of the CD unit being installed.

23) Press the COPY START key.

- The CD unit being installed will be set inside the copier.

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24) Press the CASSETTE SELECTION key.
- The CD unit is moved into contact with the drum, the main motor rotates about 3 minutes. Perform step 25) about 30 seconds after the main motor starts to rotate.
- The CD unit will be released automatically about 3 minutes after the main motor starts to rotate; be sure to complete step 25) before the unit is released.

25) Stick a flat-blade screwdriver though the hole in the front panel; turn VR851 (rough adjustment) of the CD unit until LED 851 lights. When the LED lights, press the CASSETTE SELECTION key to stop the main motor.
- If the LED keeps flashing and the adjustment is difficult, turn VR852 (fine adjustment) to keep it lit. Avoid using VR852 if possible, and keep VR852 near center.

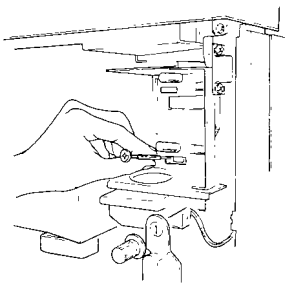

Figure 5-35

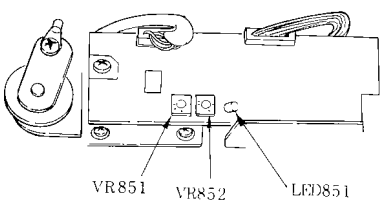

Figure 5-36

26) Make sure the main motor has stopped, and press the RESET key twice to clear the service mode.
- Steps 27) and 28) are for copiers with a CD unit changer only.

27) Press the CD UNIT SELECTION key on the control panel of the CD unit changer, and select the color in use in the CD unit. (See Figure 5-31.)

28) Press the CD UNIT OUT key. (See Figure 5-32.)
- Wait until the lamp stops flashing and remains lit.

29) Open the CD unit door, and pull out the CD unit.
30) Release the two locks, and open the toner supply cover of the CD unit.
31) Shake the toner cartridge end-to-end several times so that the toner is evenly distributed.
32) Set the toner cartridge on the CD unit.
33) While holding down the toner cartridge, pull the seal straight out until 'STOP' mark comes into view.
34) Tap lightly on the top of the toner cartridge.
35) Hold the CD unit in place, and pick and remove the cartridge.
36) Close the toner supply cover, and engage the two locks.
37) Push in the CD unit, and close the CD unit door.
38) Remove the switch activator from the door switch.
39) Set the hopper, and fix the upper stopper and shutter; connect the connector.
40) Close the front door. Make color copies, and check the images.

Note:
If the copier is without a CD unit changer, use the shipping carton to store the CD unit.

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VII. MOUNTING THE IC CARD* UNIT (NP-4835i)

* Innovatron license.

1) Open the front door, and remove the inside left cover (2 screws).
2) Remove the two screws, and lift the control panel toward the front while disengaging the hook at the center.

Note:
Take care not to damage the connectors and harnesses behind the control panel.

3) Remove the blind plate for the IC card from the control panel.

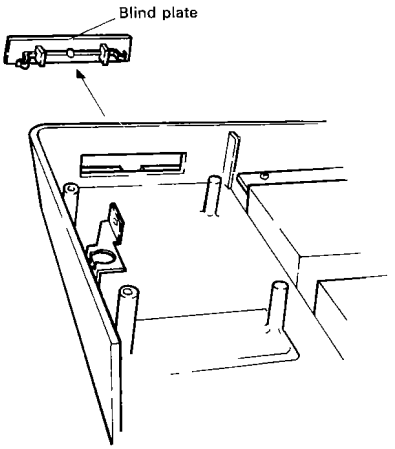

Figure 5-37

4) Mount the IC card unit on the control panel using four screws, and connect the connector.

Note:
Keep the harness of the IC card unit and the harness of the control panel together using a harness band.

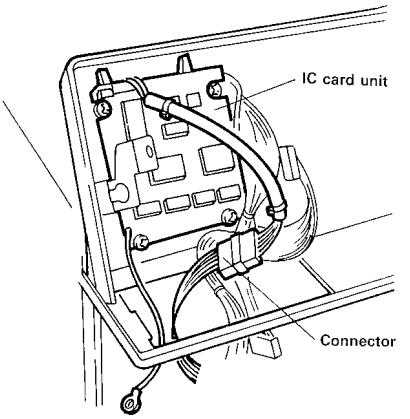

Figure 5-38

5) Mount the control panel.

6) Fit the grounding wire as shown in Figure 5-39.

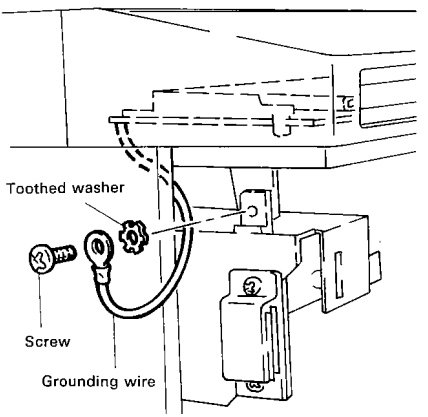

Figure 5-39

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7) Keep the grounding wire in place using a harness band so that it is kept away from the PCB.

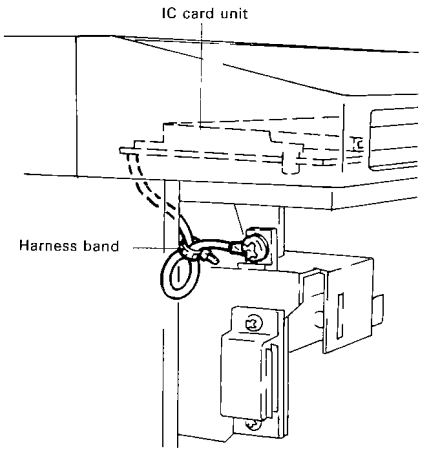

Figure 5-40

8) Mount the inside left cover of the copying machine.

9) Attach the IC card label above the IC card slot.

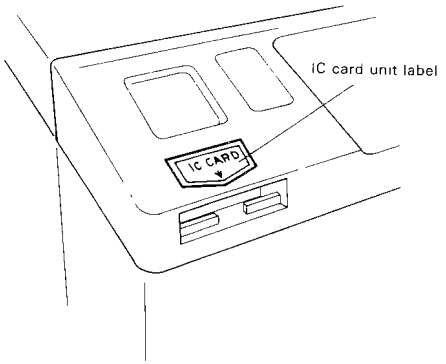

Figure 5-41

10) Attach the MC labels next to the copy mode memory key and over the copy mode label (over M3).

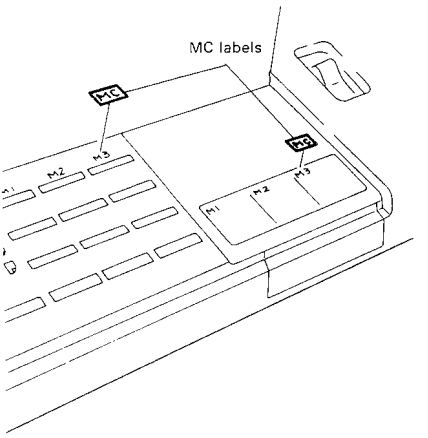

Figure 5-42

11) Attach the 'Innovatron license' seal below the ratings plate on the rear cover of the copying machine.

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I. PARTS TO BE REPLACED PERIODICALLY

The table below is a list of parts to be replaced periodically in maintaining the performance of the copier. Replace them as scheduled even when they seem to be free of damage or deformation. Should they fail, the effect will be considerable.

Arrange the schedule so that the replacement may be made during the service call closest to the end of their life.

As of MAR. 1989

No.	Parts name	Parts No.	Qt'y	Life (sheets)	Remarks
1	Charge wires (primary, pre-transfer, and transfer/separation corona units)	FY3-0030-000	–	30,000	100V
		FY3-0040-000	–	30,000	115/220/240V
2	Pre-transfer corona unit	FG1-8040-040	1	100,000	
3	Side seal (CD unit)	FA5-2720-000	2	200,000	1*
4	Side seal (black developing assembly)	FA5-2607-000	2	200,000	
5	Side spacer (black developing assembly)	FA3-8586-000	2	200,000	
6	Spacer roller (black developing assembly)	FS2-6019-000	2	200,000	
7	Spacer roller (CD unit)	FS2-6004-000	2	200,000	1*
8	Ozone filter (heat exhaust fan)	FA5-3004-000	1	70,000	or 1 yr.
9	Ozone filter (feeder fan)	FA5-2629-000	1	70,000	or 1 yr.
10	Filter (scanner cooling fan)	FA5-3010-000	1	200,000	or 1 yr.

Note:
The values above are estimates only and subject to change based on future data.

* When CD unit is used; NP-4835/4835i only.

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II. EXPECTED SERVICE LIVES OF CONSUMABLES

The following is a table of consumables which, over the warranty period of the copier, are expected to need replacement once or more because of deterioration or damage. The life of the consumables is expressed in terms of the number of copies processed; replace them when they prove to be faulty.

A. Copier

As of MAR. 1989

No.	Parts name	Parts No.	Qt'y	Life (sheets)	Remarks
1	Drum separation claw	FA3-8577-030	4	100,000	
2	Pick-up roller (pick-up unit)	FA5-2854-020	4	100,000	
3	Feeder roller (pick-up unit)	FA5-2933-000	2	100,000	
4	Separation roller (pick-up unit)	FA5-2867-000	2	100,000	
5	Scanning lamp	FH7-3152-000	1	100,000	100/115V
		FH7-3153-000	1	100,000	220/240V
6	Charge wire cleaner (transfer/separation corona unit)	FF2-0208-000	1	100,000	
7	Lower roller cleaner (fixing assembly)	FF2-0175-000	1	100,000	
8	Cleaning belt (fixing assembly)	FA3-8908-000	1	150,000*	
9	Upper roller (fixing assembly)	FA5-2956-000	1	200,000	
10	Lower roller (fixing assembly)	FA5-2957-030	1	200,000	
11	Upper separation claw (fixing assembly)	FA9-0451-000	4	200,000	
12	Lower separation claw (fixing assembly)	FA2-9037-000	4	200'000	
13	Insulation bushing (fixing assembly)	FA5-2967-000	2	200,000	
14	Pre-conditioning lamp PCB	FH7-3155-000	1	200,000	
15	Developing cylinder (black developing assembly)	FA5-2594-000	1	300,000	
16	Developing assembly drive gear (black developing assembly)	FS3-0041-000	1	300,000	
17	Thermistor (fixing assembly)	FH7-7156-000	1	300,000	
18	Registration roller	FA5-3120-000	1	300,000	
19	Halogen heater (fixing assembly)	FH7-4255-000	1	500,000	100V
		FH7-4256-000	1	500,000	115V
		FH7-4257-000	1	500,000	220V
		FH7-4258-000	1	500,000	240V
20	Bearing (fixing assembly)	XG9-0181-000	2	500,000	

* 150,000 if A4/LTR, and 60,000 if A3/LDG; approx.

Note:
The values above are estimates only and subject to change based on future data.

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As of MAR. 1989

No.	Parts name	Parts No.	Qt'y	Life (sheets)	Remarks
21	Scanner drive wire	FA5-3163-000	1	500,000	
22	ATR window (CD unit)	FA5-2672-000	1	50,000	1*
23	Starter developer red (CD unit)	F41-6012-000	1	50,000	1*
	Starter developer green (CD unit)	F41-6022-000	1	50,000	1*
	Starter developer blue (CD unit)	F41-6032-000	1	50,000	1*
	Starter developer brown (CD unit)	F41-6042-000	1	50,000	1*
24	Developing cylinder (CD unit)	FA5-2690-000	1	200,000	1*
25	Blank exposure lamp	FH7-3196-000	1	300,000	2*

Note:
The values above are estimates only and subject to change based on future data.

1*: When CD unit is used; NP-4835/4835i only.
2*: NP-4835S/4335 only.

B. Cassette Feeding Unit

As of MAR. 1989

No.	Parts name	Parts No.	Qt'y	Life (sheets)	Remarks
1	Pick-up roller	FA5-2854-020	2	100,000	
2	Feeder roller	FA5-2933-000	2	100,000	
3	Separation roller	FA5-2867-000	2	100,000	

Note:
The values above are estimates only and subject to change based on future data.

C. Paper Deck

As of MAR. 1989

No.	Parts name	Parts No.	Qt'y	Life (sheets)	Remarks
1	Pick-up roller	FA5-2854-020	2	100,000	
2	Feeder roller	FE9-0019-000	2	100,000	
3	Separation roller	FA5-3466-000	2	100,000	

Note:
The values above are estimates only and subject to change based on future data.

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III. BASIC PROCEDURE FOR PERIODIC SERVICING

Note:
Arrange for periodical servicing once every 10,000 copies, as a rule.
Before setting out for a visit, check the servicing record, and take replacement parts if necessary.

Step	Procedure	Checks	Remarks
1	Meet the person in charge of the copier.	Check the condition.	
2	Check the counter.	Check problem copies.	
3	Make test copies in the following modes: DIRECT, REDUCE, ENLARGE, two-page separation, two-sided, overlay, add-on (NP-4835 only)	a. Image density b. Soiled white background c. Clarity of characters d. Leading edge margin e. Left and right margins f. Fixing, registration, and soiled back g. Abnormal noise h. Counter operation	Standard: $2.0\ ^{+2.0}_{-1.0}$ mm (DIRECT) Standard: 2.0 ± 1.0 mm (DIRECT)
4	Clean each of the corona units.		Wipe with dry lint-free paper, and clean with alcohol.
5	Clean the transfer guide.		Remove the drum unit.
6	Clean the separation and feeder units; separation claw, feeder belt, and lower feeder unit guide.		Mount the drum unit.
7	Clean the fixing assembly and delivery unit; inlet guide, separation claws (upper, lower). Check the cleaning belt.		Use cleaning oil.
8	Perform periodical servicing according to the number of copies made. (See p. 6-5.)		
9	Clean the copyboard cover and copyboard glass.		Use an alcohol solution.
10	Make test copies.		
11	Make sample copies.		
12	Put the sample copies in order, and clean up the area around the copier.		
13	Record the final count.		
14	Enter necessary information on the Service Sheet, and report to the person in charge of the copier.		

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IV. PERIODIC SERVICING SCHEDULE

Note:
Do not use solvents or oils other than those specified.

△: Clean ●: Replace ×. Lubricate □. Adjust ◎: Check

Unit	Parts	Interval (sheets)					Remarks
		Every 10,000	Every 30,000	Every 50,000	Every 100,000	Every 200,000	
Externals	Copyboard glass	△					
	Ozone filters	◎		● (Note)			Note: Every 70,000 or 1 yr.
	Scanner fan filter					●	
Pick-up unit	Lifter bushing				△×		
	Pick-up roller bushing				△×		
Transfer/ Separation unit	Transfer guide plate (upper, lower)			△			Moist cloth
	Transfer/Separation corona unit rail			△			
	Feeder belt, Feeder guide plate			△			
	Gear				△×		Lubricant
Scanner	Mirrors 1 through 6			△			Blower brush; if dirt is excessive, alcohol.
	Dust-proofing glass			△			
	Lens			△			Blower brush
	Scanning lamp reflecting plate			△			
	Pre-exposure lamp			△			
	Collimating lens (laser)			△			
	AE sensor			△			
	Mirror (laser)			△			Cleaning tool (TKN-0471)
	Scanning lamp			△			Dry cloth
	Document sensor			△ □			Blower brush
	Scanner rail				△×		Alcohol; apply low viscosity oil thereafter.
	Blank exposure lamp (LED)	△					
Corona unit	Corona wire (primary, pre-transfer, transfer/separation)	△	●				Dry lint-free paper; thereafter, alcohol (Do not use water.)
	Primary corona unit grid wire	△					
	Shield plate/block (primary, pre-transer, transfer/separation)	△					
	Leaf spring to feeder unit (transfer corona unit)	△					Dry lint-free paper; thereafter, alcohol (Do not use water.)
	Pre-transfer corona unit	△			●		

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Unit	Parts	Interval (sheets)					Remarks
		Every 10,000	Every 30,000	Every 50,000	Every 100,000	Every 200,000	
Black developing assembly/CD unit*	Spacer roller			△		●	
	Container			△			Moist cloth
	Copier rail unit				△×		Lubricant
	Pressure clutch				△×		Low viscosity oil
	Side seal					●	
	Side spacer					●	
Fixing assembly	Upper/Lower roller	△					Cleaning oil (TKN-0464)
	Separation claw	△					Alcohol solution
	Inlet guide	△					
	Anti-static brush	△					Lint-free paper; remove lint.
	Lower roller felt			△			Remove toner.
Cassette feeding unit	Lifter bushing				△×		
	Pick-up roller bushing				△×		

* If a CD unit is used, the interval refers to the number of sheets processed by the unit.

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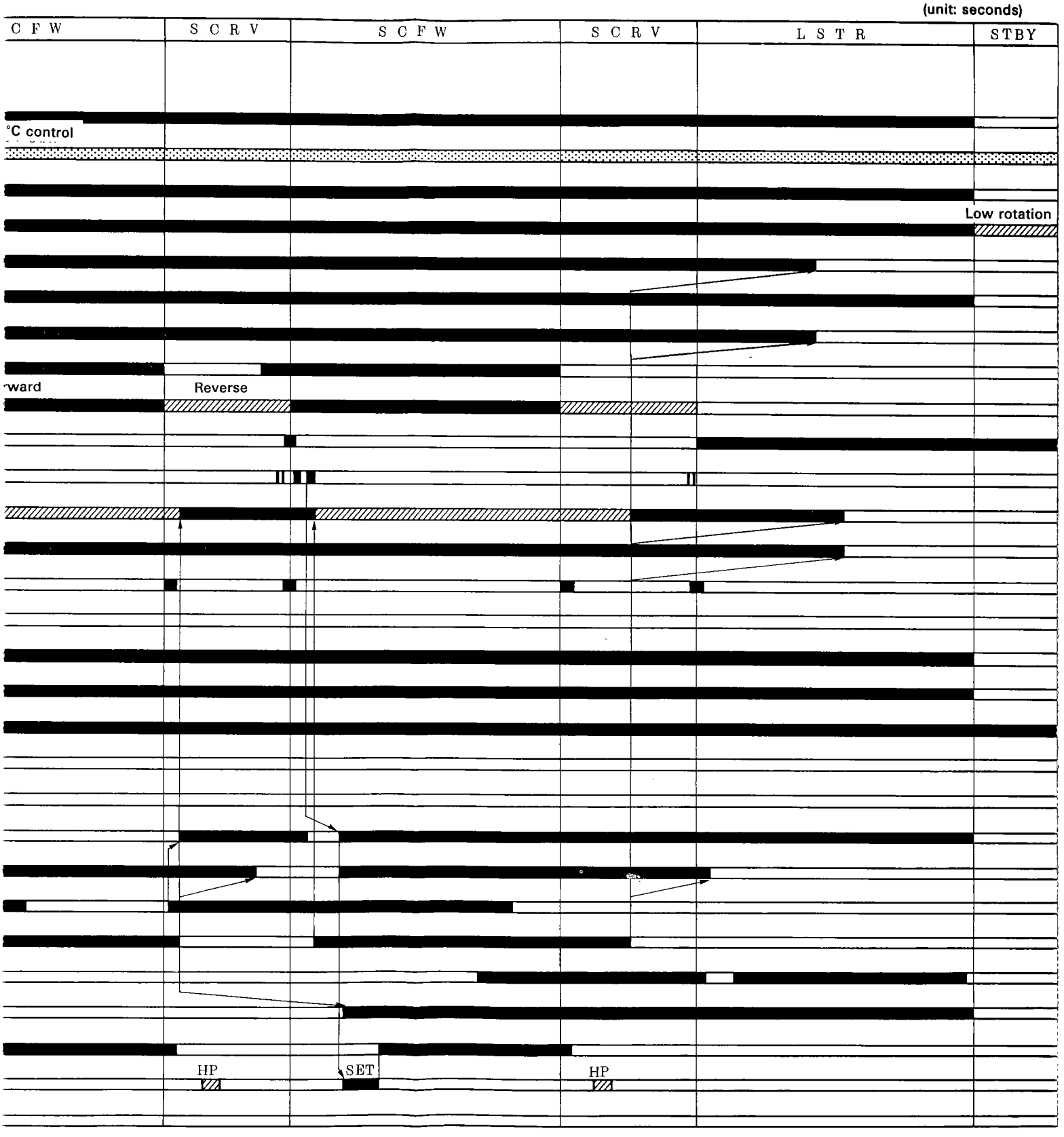
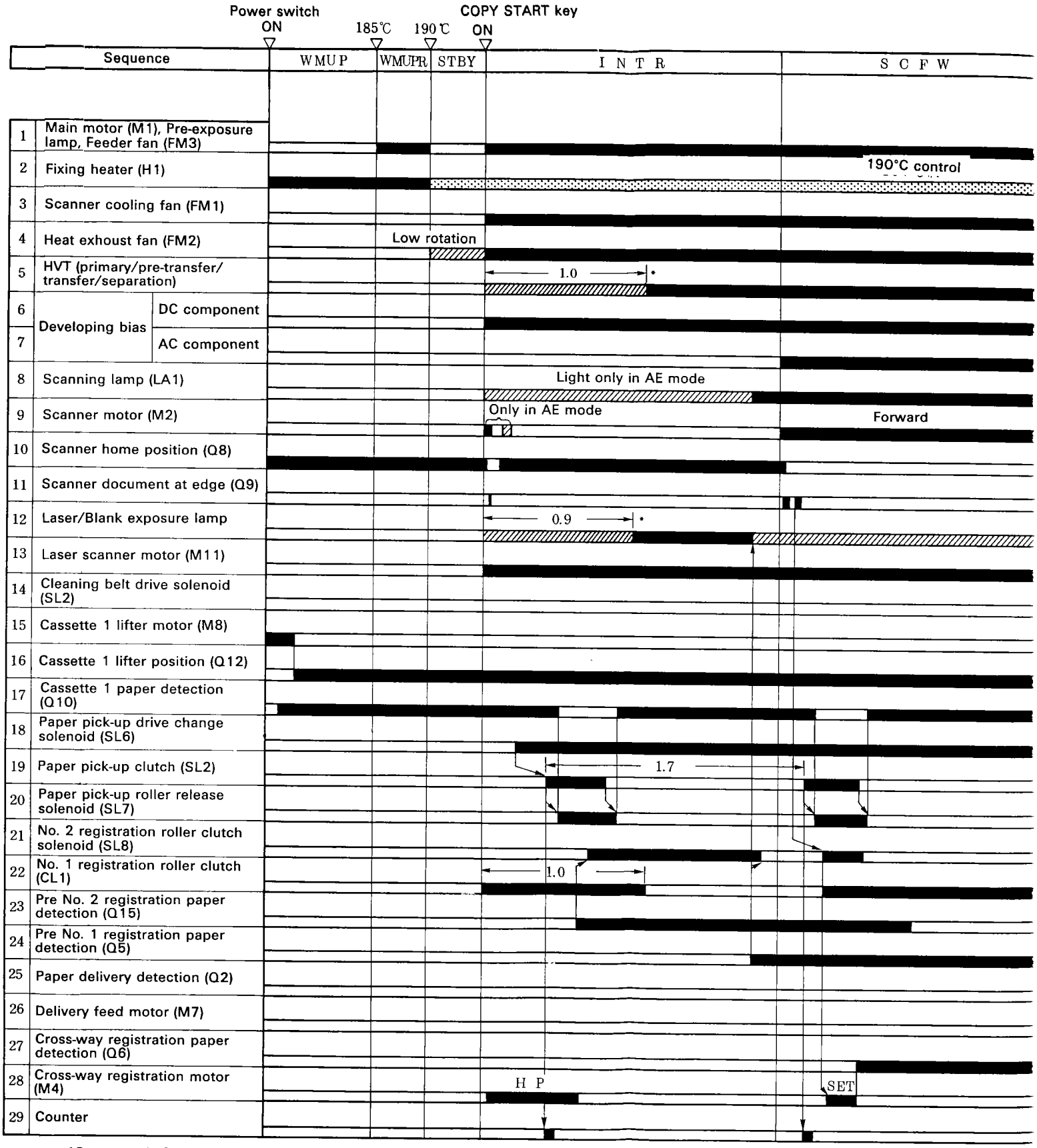
(unit: seconds)



A4/Letter, Two direct copy, Pick-up from cassette 1


Power switch ON
185℃
190℃
COPY START key ON
Sequence
WMUP
WMUPR
STBY
I N T R
S C F W
1 Main motor (M1), Pre-exposure lamp, Feeder fan (FM3)
2 Fixing heater (H1)
190°C control
3 Scanner cooling fan (FM1)
4 Heat exhoust fan (FM2)
Low rotation
5 HVT (primary/pre-transfer/ transfer/separation)
1.0
6 Developing bias DC component
7 AC component
8 Scanning lamp (LA1)
Light only in AE mode
9 Scanner motor (M2)
Only in AE mode
Forward
10 Scanner home position (Q8)
11 Scanner document at edge (Q9)
12 Laser/Blank exposure lamp
0.9
13 Laser scanner motor (M11)
14 Cleaning belt drive solenoid (SL2)
15 Cassette 1 lifter motor (M8)
16 Cassette 1 lifter position (Q12)
17 Cassette 1 paper detection (Q10)
18 Paper pick-up drive change solenoid (SL6)
19 Paper pick-up clutch (SL2)
1.7
20 Paper pick-up roller release solenoid (SL7)
21 No. 2 registration roller clutch solenoid (SL8)
22 No. 1 registration roller clutch (CL1)
1.0
23 Pre No. 2 registration paper detection (Q15)
24 Pre No. 1 registration paper detection (Q5)
25 Paper delivery detection (Q2)
26 Delivery feed motor (M7)
27 Cross-way registration paper detection (Q6)
28 Cross-way registration motor (M4)
H P
SET
29 Counter

*Output, only for NP-4835S/4335.

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2. LIST OF SIGNALS/ABBREVIATIONS

1. SIGNALS

ADSD	ADD-ON SHUTTER SOLENOID DRIVE Command
AE	AE SENSOR OUTPUT signal (analog)
BD	BEAM DETECT signal
BDRSD	BLACK DEVELOPING ASSEMBLY RELEASE CLUTCH SOLENOID DRIVE command
BTEP	BLACK TONER OUT signal
busy	BUSY signal
C1LTMD	CASSETTE1 LIFTER MOTOR DRIVE command
C2LTMD	CASSETTE2 LIFTER MOTOR DRIVE command
C3LTMD	CASSETTE3 LIFTER MOTOR DRIVE command
C4LTMD	CASSETTE4 LIFTER MOTOR DRIVE command
C1LTP	CASSETTE1 LIFTER POSITION signal
C2LTP	CASSETTE2 LIFTER POSITION signal
C3LTP	CASSETTE3 LIFTER POSITION signal
C4LTP	CASSETTE4 LIFTER POSITION signal
C1PD	CASSETTE1 PAPER DETECTION signal
C2PD	CASSETTE2 PAPER DETECTION signal
C3PD	CASSETTE3 PAPER DETECTION signal
C4PD	CASSETTE4 PAPER DETECTION signal
CBCC	COPYBOARD COVER CLOSED signal
CCD	CONTROL COUNTER DRIVE command
CCDT	CONTROL COUNTER DETECTION signal
CDUDC	CD UNIT DOOR CLOSE signal
CLBSD	CLEANING BELT DRIVE SOLENOID DRIVE command
CLRD	CD UNIT CLAW RELEASE DETECT signal
CNT1D	COUNTER1 DRIVE command
CNT2D	COUNTER2 DRIVE command
CRD	CD UNIT RELEASE DETECT signal
CRGA	CROSS FEED REGISTRATION MOTOR DRIVE PULSE command A
CRGB	CROSS FEED REGISTRATION MOTOR DRIVE PULSE command B
CRGSTB	CROSS FEED REGISTRATION MOTOR STROVE signal
CRSD	CD UNIT CLAW RELEASE SOLENOID DRIVE command
CT1	COLOR TONER signal 1
CT2	COLOR TONER signal 2
CT3	COLOR TONER signal 3
CTEP1	COLOR TONER OUT signal 1
CTEP2	COLOR TONER OUT signal 2
CTLON	COLOR TONER LIGHT ON command
CTSSD	COLOR TONER SUPPLY SOLENOID DRIVE command
DFA	DELIVERY FEED MOTOR DRIVE PULSE command A
DFB	DELIVERY FEED MOTOR DRIVE PULSE command B
DLEDD1	DOCUMENT SIZE DETECTION LED DRIVE command 1
DLEDD2	DOCUMENT SIZE DETECTION LED DRIVE command 2
DLEDD3	DOCUMENT SIZE DETECTION LED DRIVE command 3
DRMD	DRUM (MAIN MOTOR) DRIVE command
DSIN	DF SERIAL INPUT signal
DSOUT	DF SERIAL OUTPUT signal
DSZ1	DOCUMENT SIZE DETECTION signal 1 (analog)
DSZ2	DOCUMENT SIZE DETECTION signal 2 (analog)
DSZ3	DOCUMENT SIZE DETECTION signal 3 (analog)
ECNT	EDITING UNIT CONNECT signal
EJECT	CD UNIT EJECT KEY signal
FICD	CD UNIT FEED IN CLUTCH DRIVE command
FM1D	SCANNER INTAKE FAN (FM1) DRIVE command
FM2D	EXHAUST FAN (FM2) DRIVE command
FM3D	FEED FAN (FM3) DRIVE command
FOCD	CD UNIT FEED OUT CLUTCH DRIVE command
FRD	CD UNIT FEED RELEASE DETECT signal
FRSD	CD UNIT FEED RELEASE SOLENOID DRIVE command
FRST	FIXING ROLLER SURFACE TEMPERATURE signal (analog)
FSD	CD UNIT FEED SOLENOID DRIVE command
HHP	CD UNIT HORIZONTAL FEED HOME POSITION signal
HLP	CD UNIT HORIZONTAL FEED LEFT POSITION signal
HMCLK	HORIZONTAL FEED MOTOR CLOCK signal
HMD	HORIZONTAL FEED MOTOR DRIVE command
HMD	HOPPER MOTOR DRIVE command
HMFO	HORIZONTAL FEED MOTOR FEED OUT command
HRP	CD UNIT HORIZONTAL FEED RIGHT POSITION signal
HTRD	HEATER DRIVE command
HVAC	AC TRANSFORMER DRIVE command
HVBAC	AC DEVELOPING BIAS DRIVE command
HVBDC	DC DEVELOPING BIAS CONTROL command (analog)
HVGB	GRID BIAS CONTROL command (analog)
HVPR	PRIMARY CORONA CURRENT CONTROL command (analog)
HVPT	PRE-TRANSFER CORONA CURRENT CONTROL command (analog)
HVSP	SEPARATION CORONA CURRENT CONTROL command (analog)
HVTR	TRANSFER CORONA CURRENT CONTROL command (analog)
LAON	SCANNING LAMP ON signal
LD	LASER DIODE DRIVE command (analog)
LDATA	LASER DATA signal
LHP	LENS HOME POSITION signal
LILD	LIFTER LOWER LIMIT DETECT signal
LIMD	LIFTER MOTOR DRIVE command
LINT	LIGHT INTENSITY signal (analog)
LIPD	LIFTER POSITION DETECT signal
LIUD	LIFTER UPPER LIMIT DETECT signal
LMC	LASER MOTOR CONTROL command
LMCLK	LASER MOTOR CLOCK signal
LMD	LASER MOTOR DRIVE command
LMRDY	LASER MOTOR READY signal
LNA	LENS MOTOR DRIVE PULSE command A
LNB	LENS MOTOR DRIVE PULSE command B
LNSTB	LENS MOTOR STROVE signal
LOFF	LASER OFF command
LRD	LAMP REGULATOR DRIVE command
LTDWN	LIFTER DOWN command
LF1A	LOWER FEED MOTOR 1 DRIVE PULSE command A
LF1B	LOWER FEED MOTOR 1 DRIVE PULSE command B
LF1STB	LOWER FEED MOTOR 1 STROVE signal
LF2A	LOWER FEED MOTOR 2 DRIVE PULSE command A
LF2B	LOWER FEED MOTOR 2 DRIVE PULSE command B
LF2STB	LOWER FEED MOTOR 2 STROVE signal
M2CLK	SCANNER MOTOR (M2) CLOCK signal
M2LK	SCANNER MOTOR (M2) PLL LOCK signal
MFDC	MANUAL FEED DOOR CLOSED signal
MFDO	MANUAL FEED DOOR OPEN signal
MFON	MANUAL FEED ON (START) command
MFPD	MANUAL FEED PAPER DETECTION signal
MFRSD	MANUAL FEED ROLLER SOLENOID DRIVE command
MFSD	MANUAL FEED SELECT SOLENOID DRIVE command
MFSSD	MANUAL FEED SHATTER SOLENOID DRIVE command
PCD	PAPER DECK DOOR CLOSED signal
PD	PHOTO DIODE signal (analog)
PDP	PAPER DETECTION signal
PDP1	PAPER DETECTION signal 1
PDP2	PAPER DETECTION signal 2
PDP3	PAPER DETECTION signal 3
PDP4	PAPER DETECTION signal 4
PDP5	PAPER DETECTION signal 5
PDP6	PAPER DETECTION signal 6
PDP7	PAPER DETECTION signal 7
PDP8	PAPER DETECTION signal 8
PDPD	PAPER DETECTION signal
PEXP	PRE-CONDITIONING EXPOSURE LAMP LIT command
PRSD	PICK-UP ROLLER RELEASE SOLENOID DRIVE command
PRSD1	PICK-UP ROLLER RELEASE SOLENOID 1 DRIVE command
PRSD2	PICK-UP ROLLER RELEASE SOLENOID 2 DRIVE command
PSSD1	PICK-UP DRIVE SELECT SOLENOID 1 DRIVE command
PSSD2	PICK-UP DRIVE SELECT SOLENOID 2 DRIVE command
PUCD1	PICK-UP ROLLER CLUTCH1 DRIVE command
PUCD2	PICK-UP ROLLER CLUTCH2 DRIVE command
PUMD	PICK-UP ROLLER MOTOR DRIVE command
PUSD	PICK-UP ROLLER CLUTCH SOLENOID DRIVE command
PWOFF	POWER SWITCH OFF command
RGCD1	REGISTRATION ROLLER1 CLUTCH DRIVE command
RGSD2	REGISTRATION ROLLER2 CLUTCH SOLENOID DRIVE command
RGSD3	REGISTRATION ROLLER3 CLUTCH SOLENOID DRIVE command
RGSD4	REGISTRATION ROLLER2 CLUTCH SOLENOID DRIVE command
RLDC	RIGHT LOWER DOOR CLOSED signal
SCCLK	SCANNER SPEED CONTROL command
SCDP	SCANNER AT LEADING EDGE POSITION signal
SCFW	SCANNER FORWARD command
SCHP	SCANNER HOME POSITION signal
SCMD	SCANNER MOTOR DRIVE command
SELECT	CD UNIT SELECT KEY signal
VDE	VIDEO ENABLE signal
VHP	CD UNIT VERTICAL FEED HOME POSITION signal
VMBK	VERTICAL FEED MOTOR BREAK command
VMCLK	VERTICAL FEED MOTOR CLOCK signal
VMDWN	VERTICAL FEED MOTOR DOWN command
VMLSD	VERTICAL FEED MOTOR LOCK RELEASE SOLENOID DRIVE command
VMUP	VERTICAL FEED MOTOR UP command
VSYNC	VERTICAL SYNCHRONOUS signal
WTOF	EXCESS WASTE TONER signal

2. ABBREVIATIONS

INTR	INITIAL ROTATION
LSTR	LAST ROTATION
SCFW	SCANNER FORWARD
SCRV	SCANNER REVERSE
STBT	STANDBY
WAIT	WAIT
WMUP	WARM UP
WMUPR	WARM UP ROTATION

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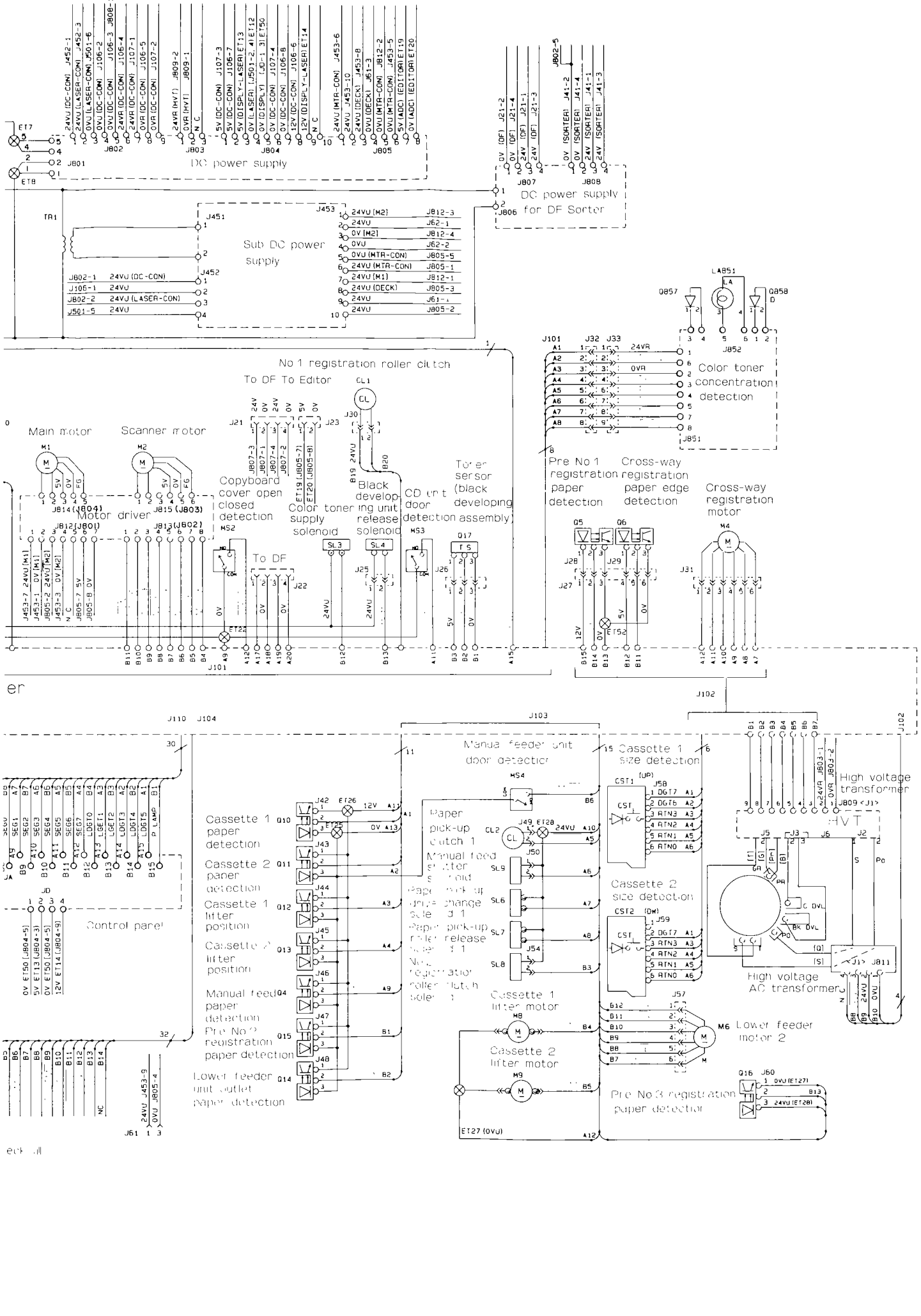
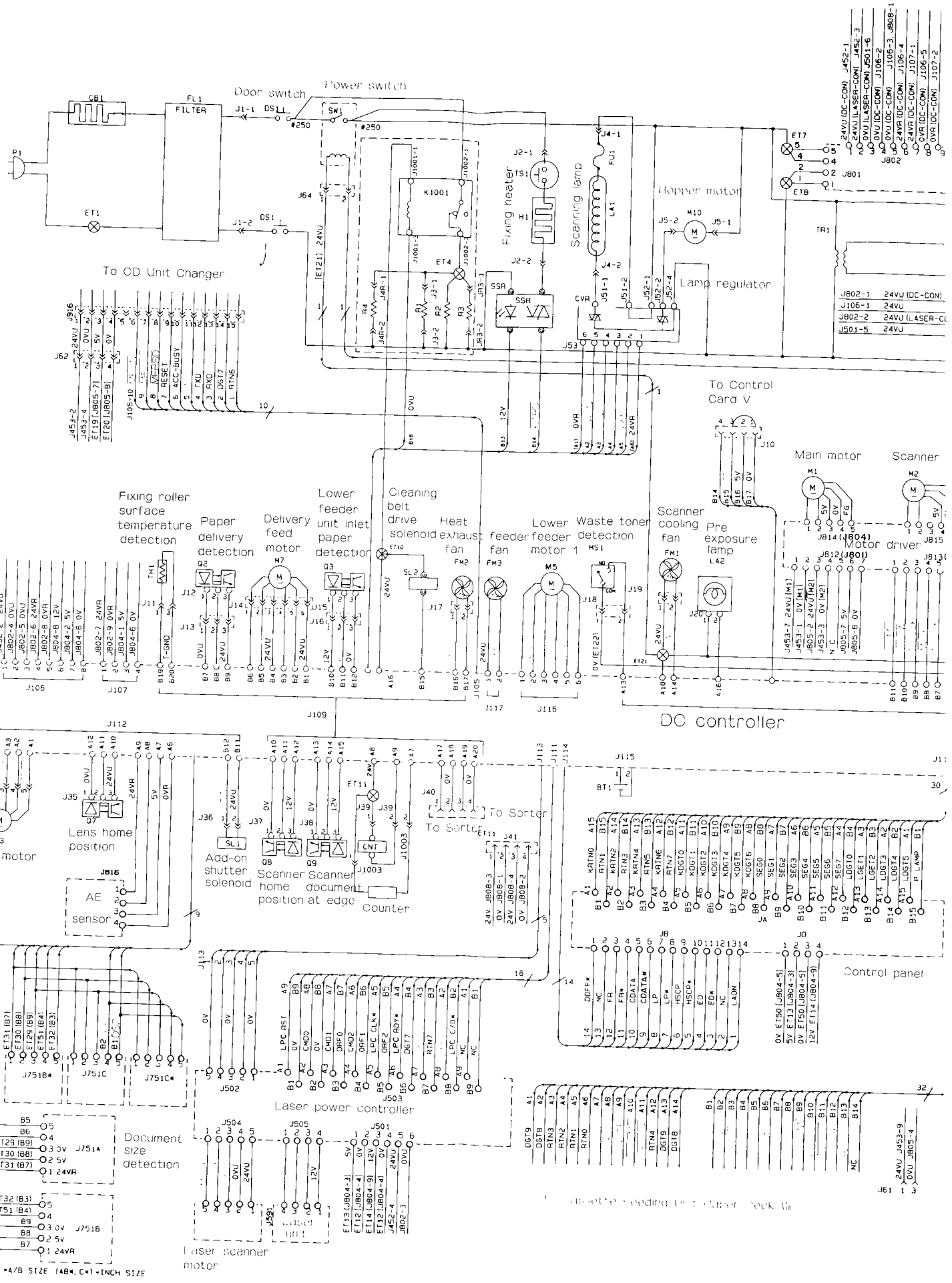
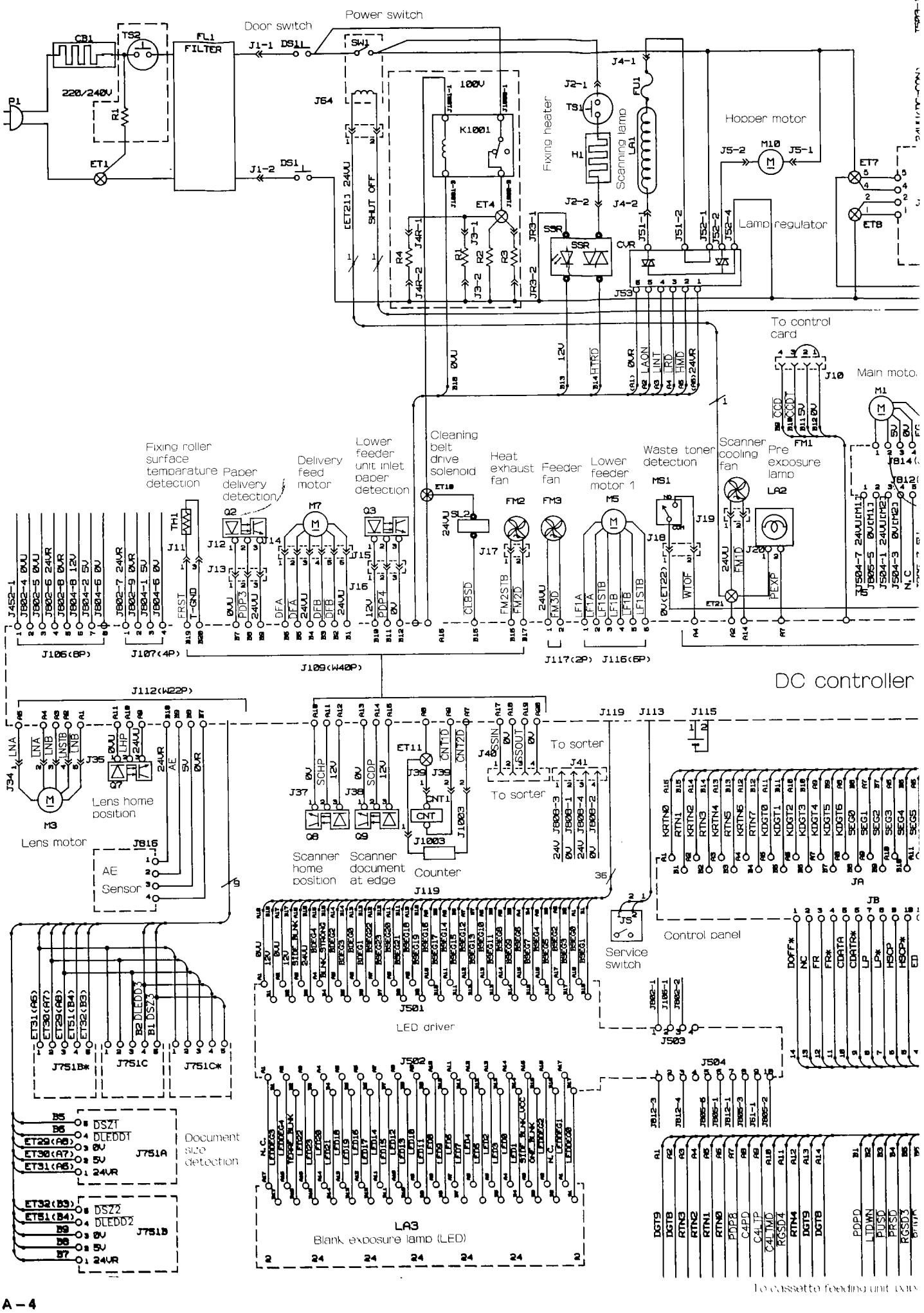
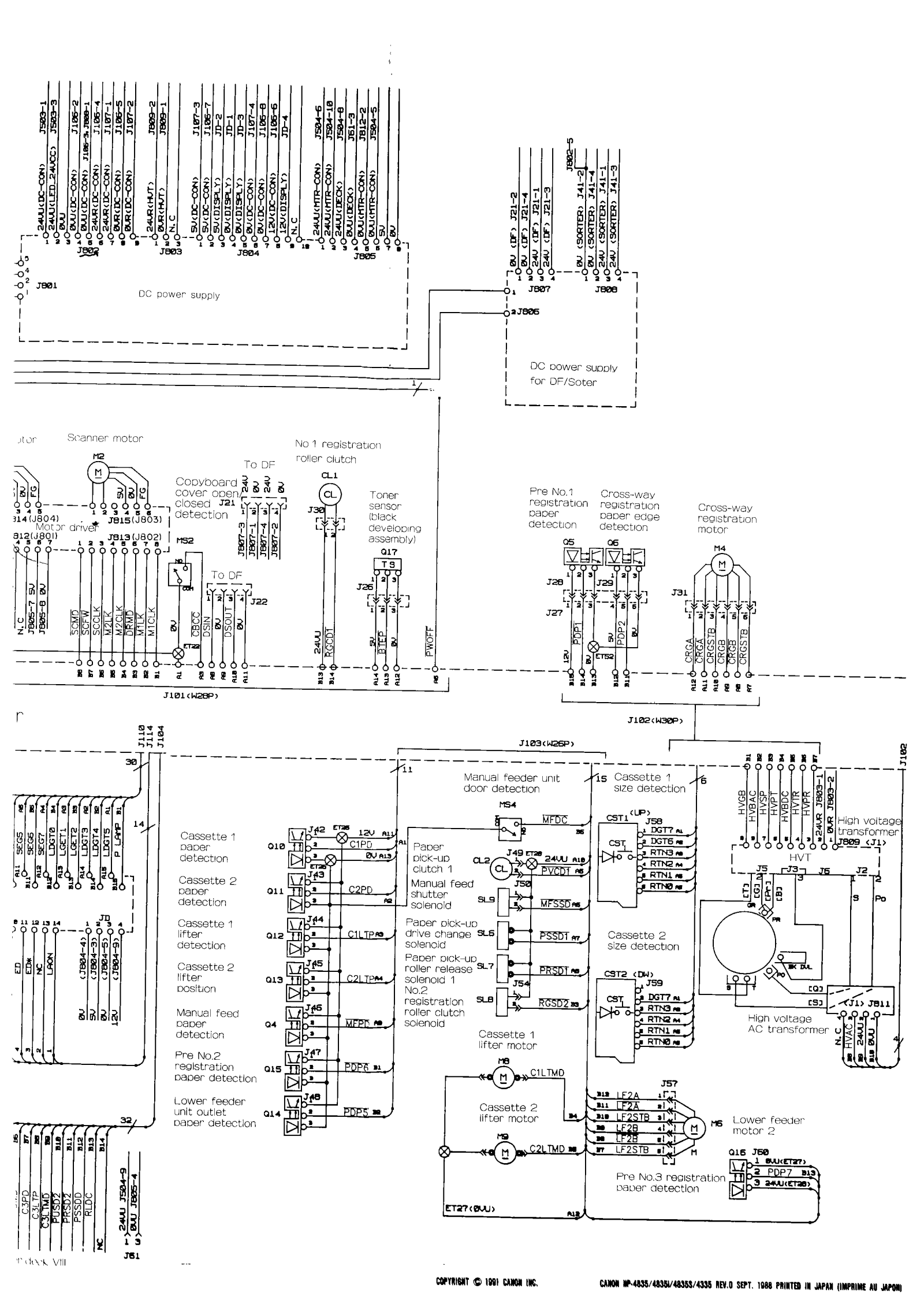

DC power supply
DC power supply for DF Sorter
Sub DC power supply
No 1 registration roller clutch
To DF To Editor
Main motor
Scanner motor
Motor driver
Copyboard cover open closed detection
Color toner supply solenoid
Black developing unit release solenoid
CD unit door detection
Toner sensor (black developing assembly)
To DF
Color toner concentration detection
Pre No 1 registration paper detection
Cross-way registration paper edge detection
Cross-way registration motor
Manual feeder unit door detection
Cassette 1 size detection
Cassette 2 size detection
Cassette 1 paper detection
Cassette 2 paper detection
Cassette 1 lifter position
Cassette 2 lifter position
Manual feed paper detection
Pre No 2 registration paper detection
Lower feeder unit outlet paper detection
Paper pick-up clutch 1
Manual feed solenoid
Paper pick-up drive change solenoid 1
Paper pick-up roller release solenoid 1
No 2 registration roller clutch solenoid 1
Cassette 1 lifter motor
Cassette 2 lifter motor
Lower feeder motor 2
Pre No 3 registration paper detection
High voltage transformer
High voltage AC transformer
Control panel


Door switch
Power switch
Fixing heater
Scanning lamp
Hopper motor
Lamp regulator
To CD Unit Changer
To Control Card V
Main motor
Scanner
Motor driver
Fixing roller surface temperature detection
Paper delivery detection
Delivery feed motor
Lower feeder unit inlet paper detection
Cleaning belt drive solenoid
Heat exhaust fan
Lower feeder fan
Lower feeder motor 1
Waste toner detection
Scanner cooling fan
Pre exposure lamp
DC controller
Lens motor
Lens home position
Add-on shutter solenoid
Scanner home position
Scanner document at edge
Counter
AE sensor
To Sorter
Control panel
Laser power controller
Document size detection
Laser scanner motor
[ABC] = A/B SIZE (ABC) = INCH SIZE

3A. GENERAL CIRCUIT DIAGRAM (NP-4835S/4355)





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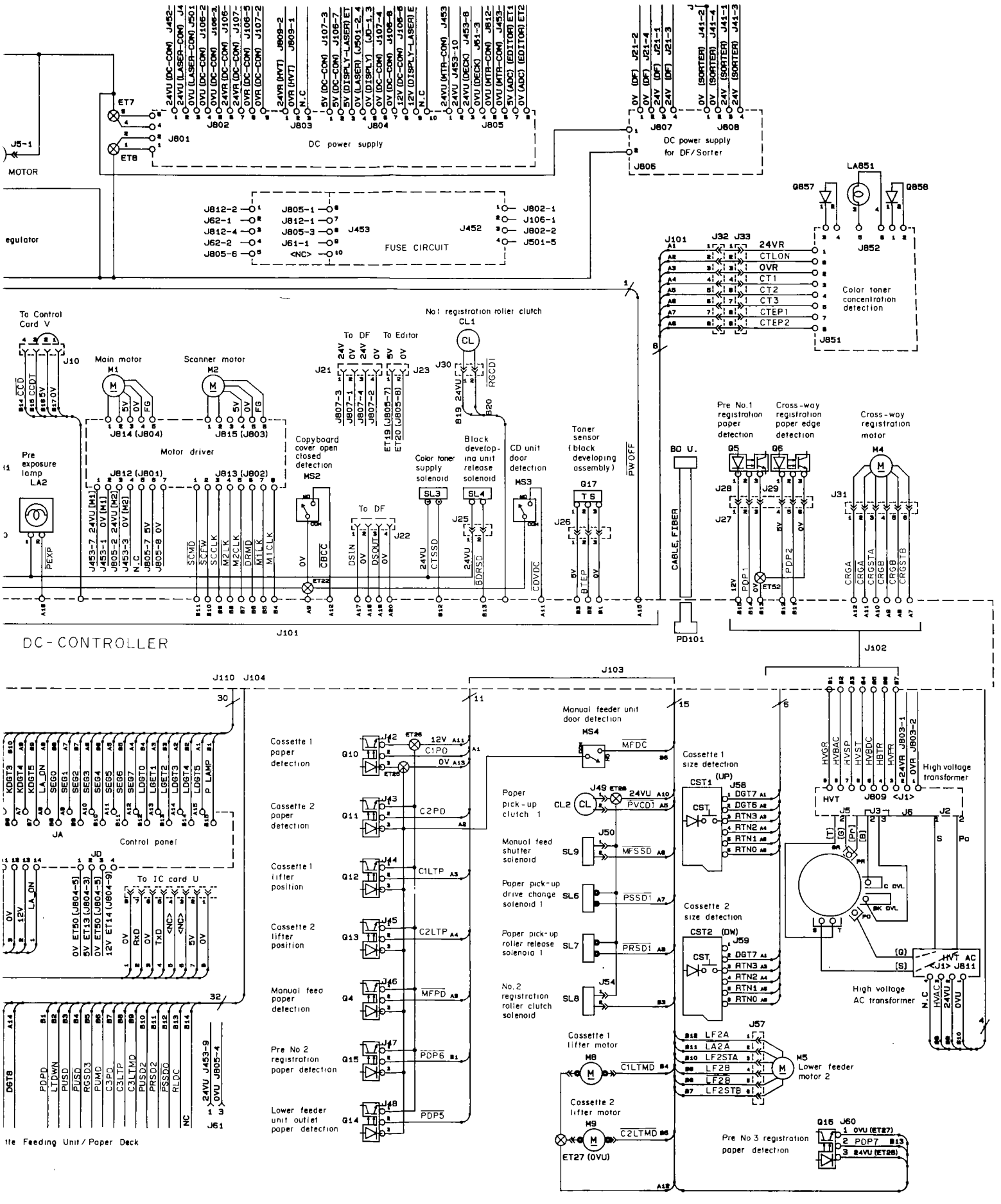
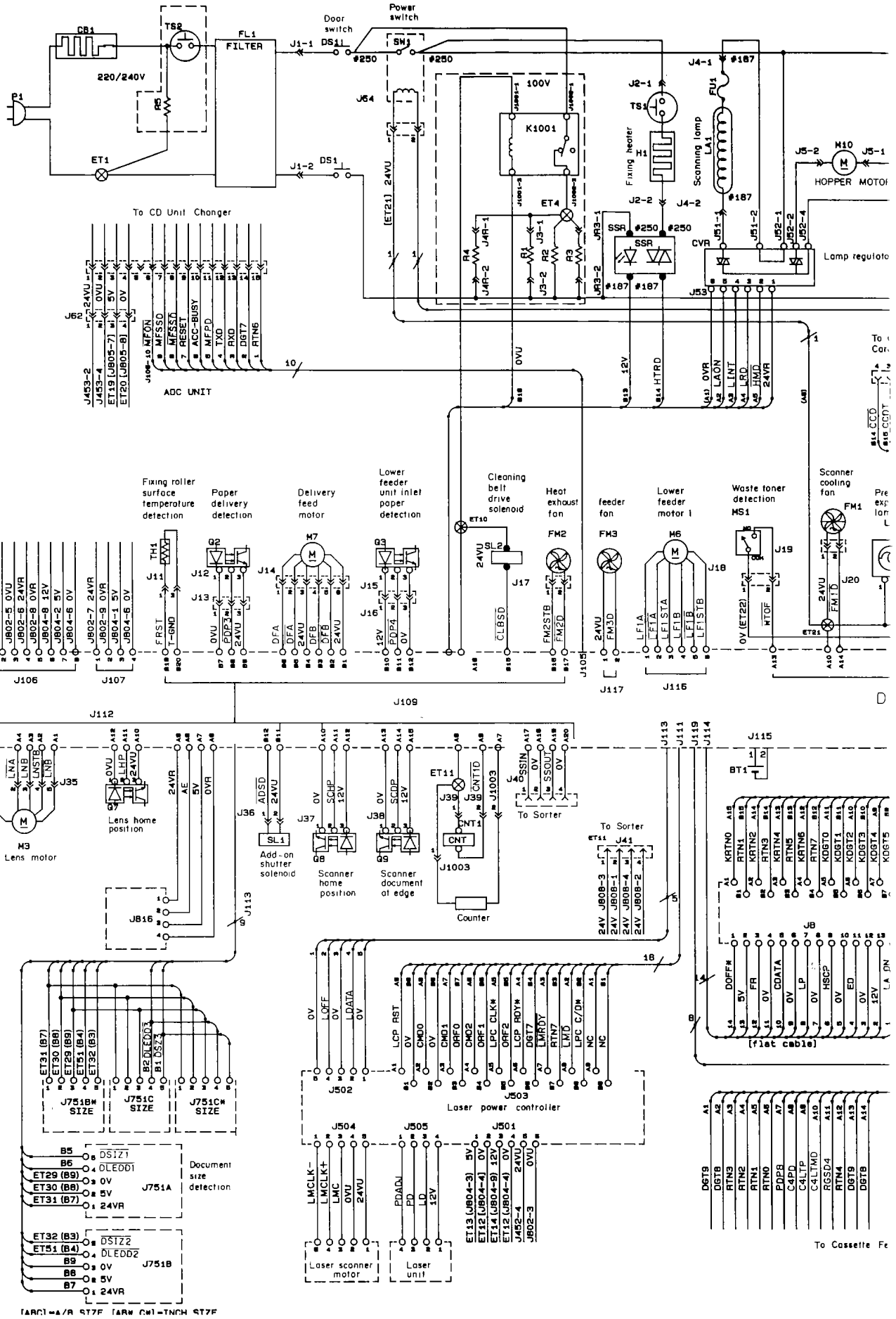

DC power supply
DC power supply for DF/Sorter
FUSE CIRCUIT
Color toner concentration detection
Main motor
Scanner motor
Motor driver
Pre exposure lamp
Copyboard cover open closed detection
Color toner supply solenoid
Black developing unit release solenoid
CD unit door detection
Toner sensor (black developing assembly)
Pre No.1 registration paper detection
Cross-way registration paper edge detection
Cross-way registration motor
BD U.
CABLE, FIBER
PD101
DC-CONTROLLER
Control panel
Cassette 1 paper detection
Cassette 2 paper detection
Cassette 1 lifter position
Cassette 2 lifter position
Manual feed paper detection
Pre No 2 registration paper detection
Lower feeder unit outlet paper detection
Manual feeder unit door detection
Paper pick-up clutch 1
Manual feed shutter solenoid
Paper pick-up drive change solenoid 1
Paper pick-up roller release solenoid 1
No. 2 registration roller clutch solenoid
Cassette 1 size detection
Cassette 2 size detection
Cassette 1 lifter motor
Cassette 2 lifter motor
Lower feeder motor 2
Pre No 3 registration paper detection
High voltage transformer
High voltage AC transformer
Feeding Unit / Paper Deck



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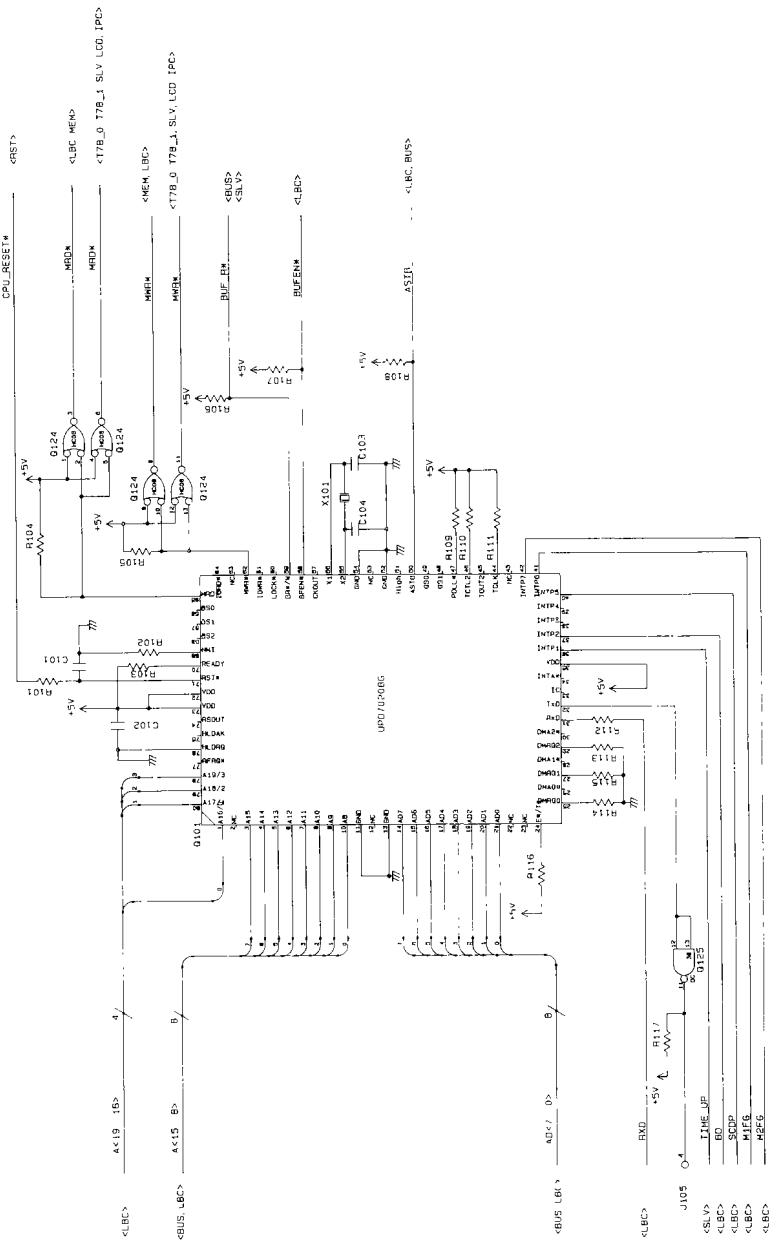
4. DC CONTROLLER (NP-4835)

DC controller (NP-4835) 1/20 (CPU: Main CPU)



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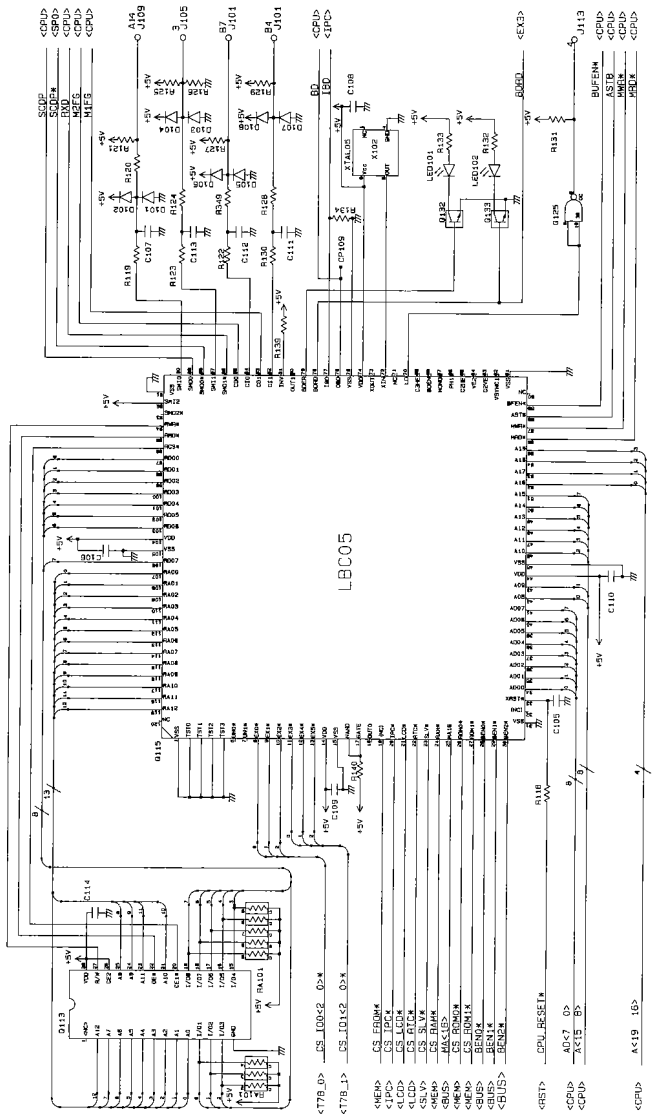
DC controller (NP-4835) 2/20 (LBC: Laser control)



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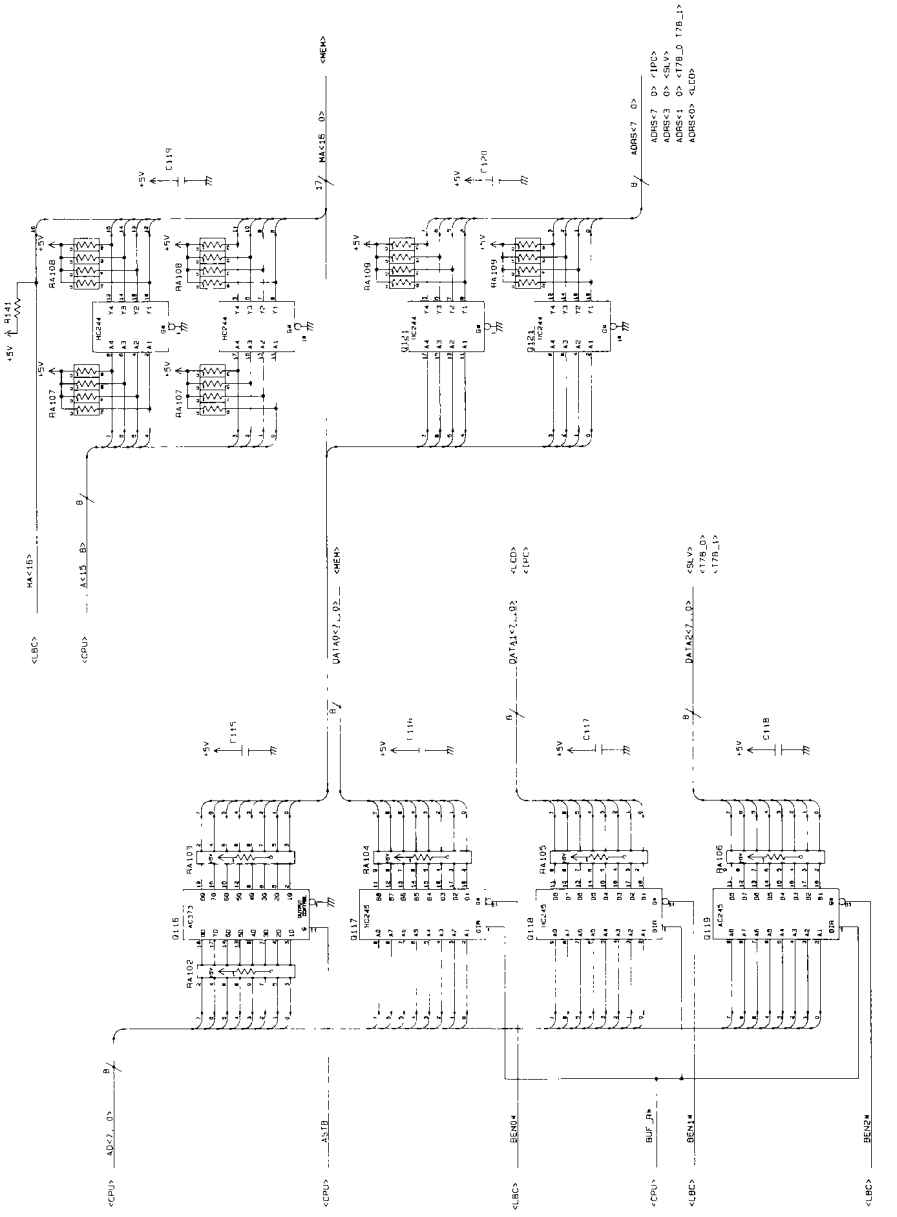
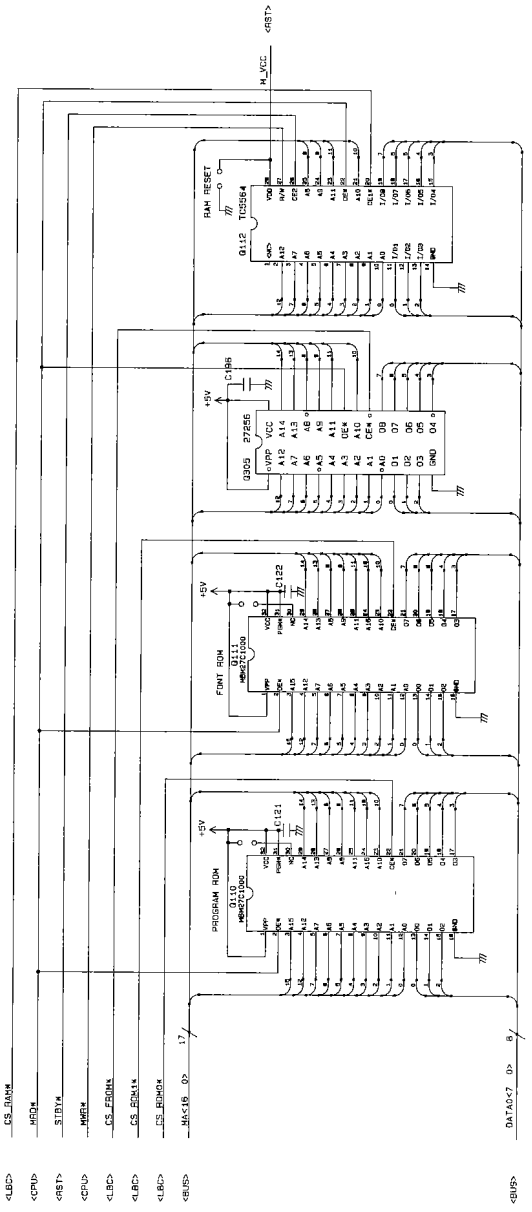
DC controller (NP-4835) 3/20 (BUS: Bus line control)



DC controller (NP-4835) 4/20 (MEM: ROM, RAM)



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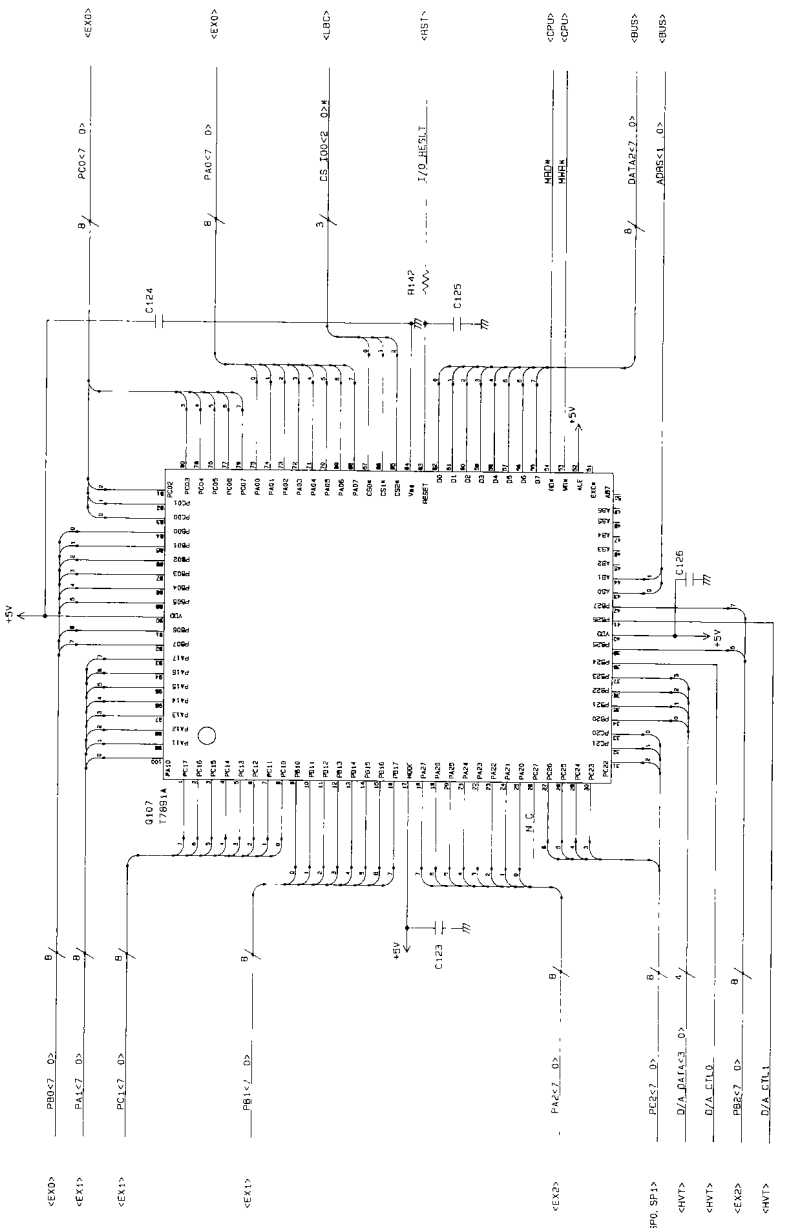
DC controller (NP-4835) 5/20 (T78_0: I/O expander 1)



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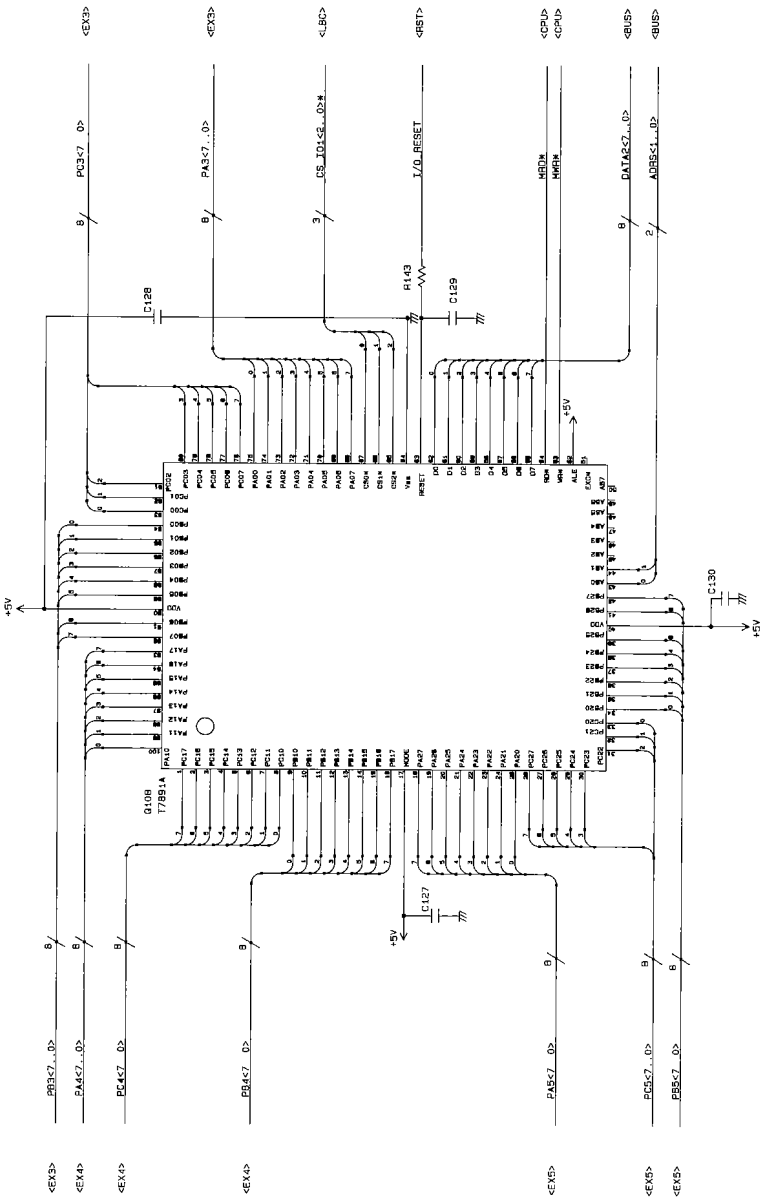
DC controller (NP-4835) 6/20 (T78_1: I/O expander 2)



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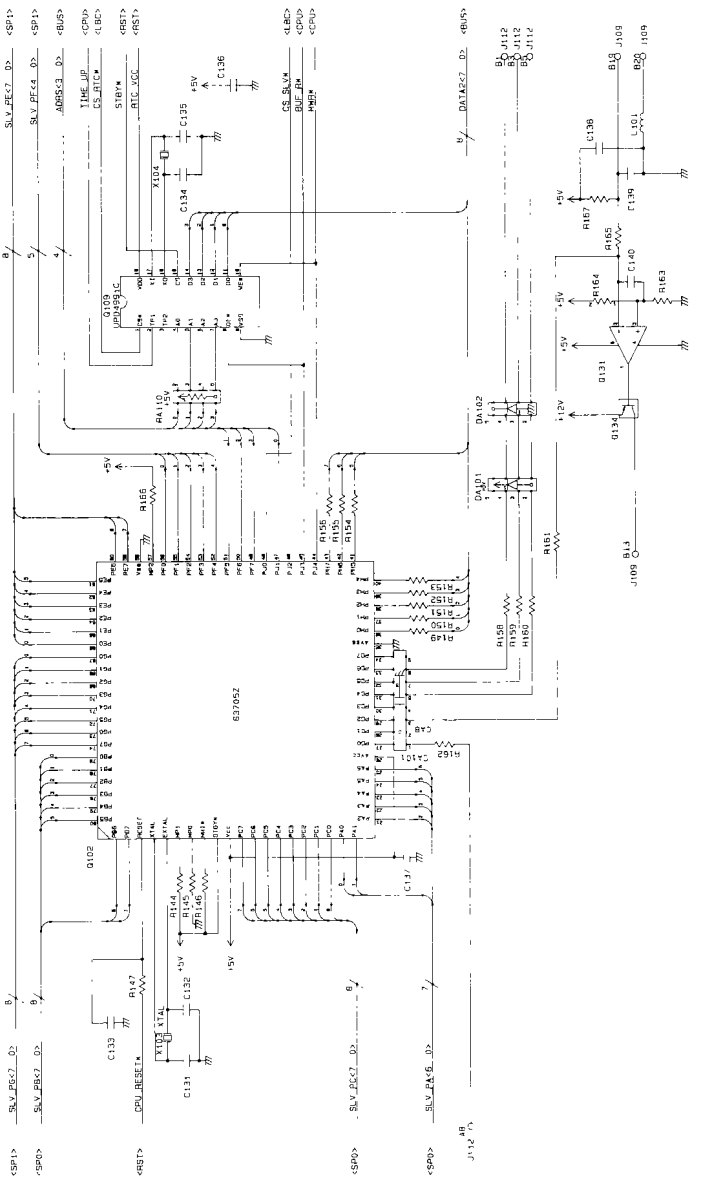
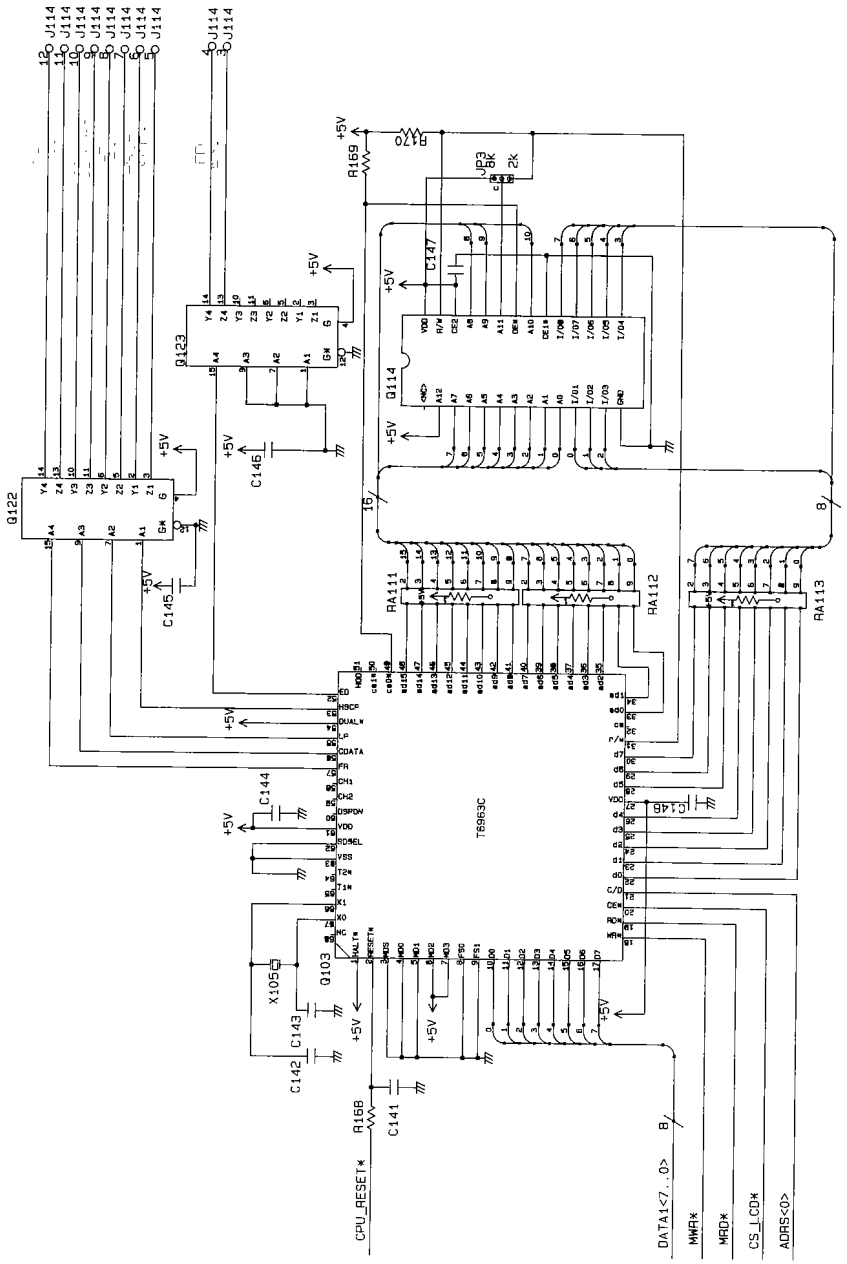
DC controller (NP-4835) 7/20 (SLV: Sub CPU)



DC controller (NP-4835) 8/20 (LCD: Liquid crystal display control)



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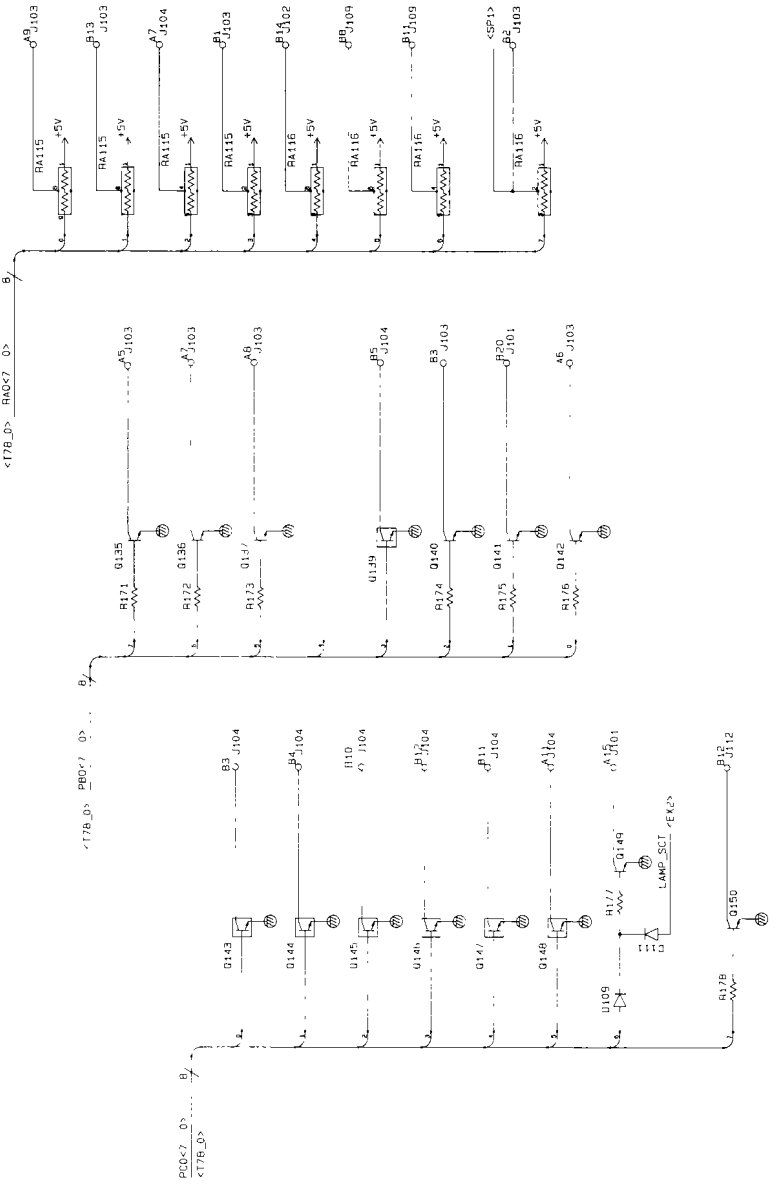
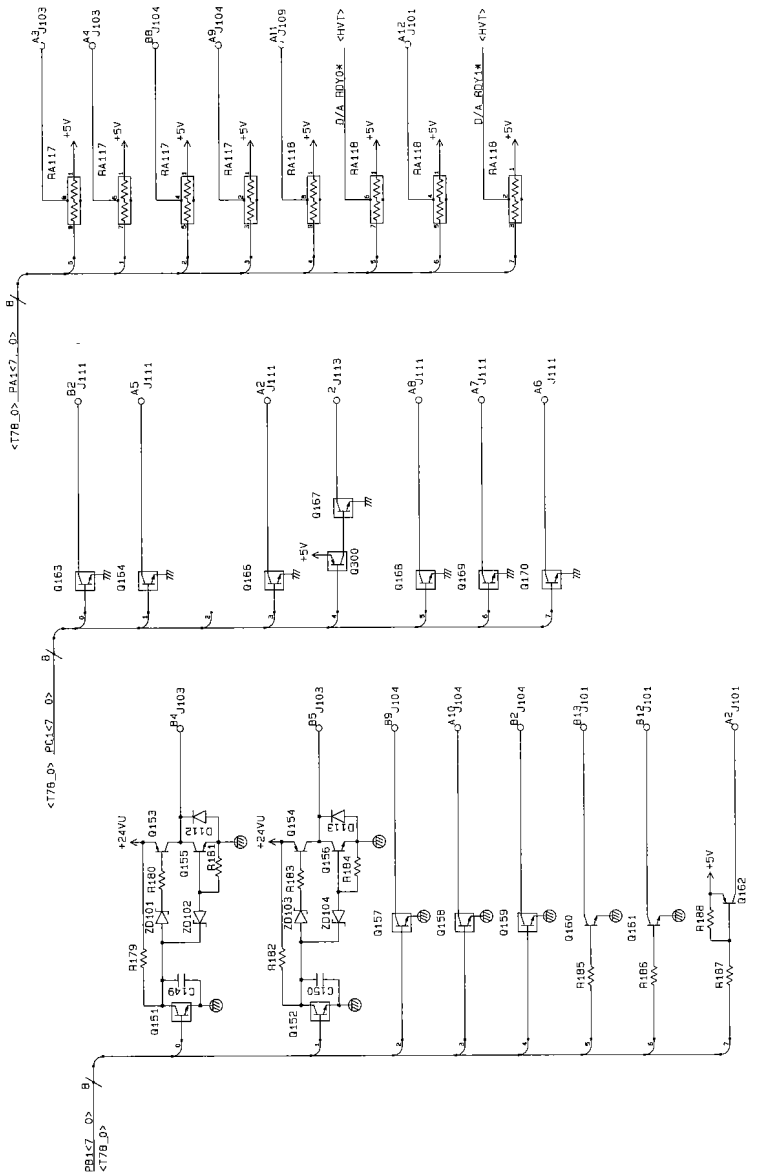
DC controller (NP-4835) 9/20 (EX0)



DC controller (NP-4835) 10/20 (EX1)



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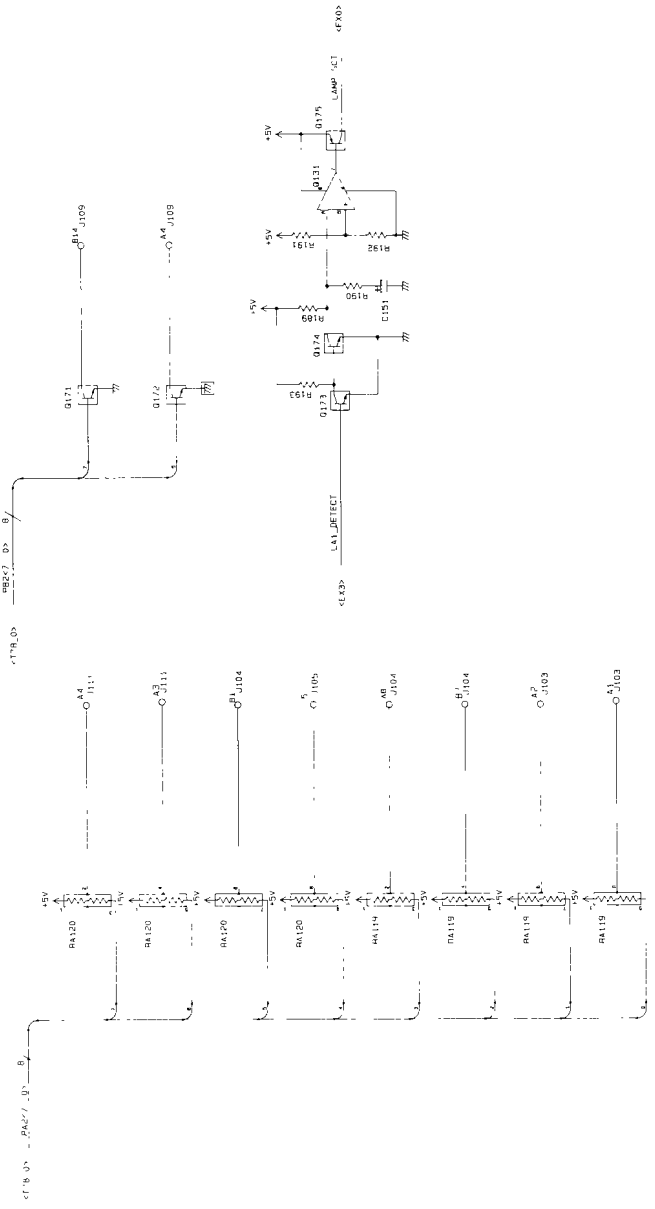
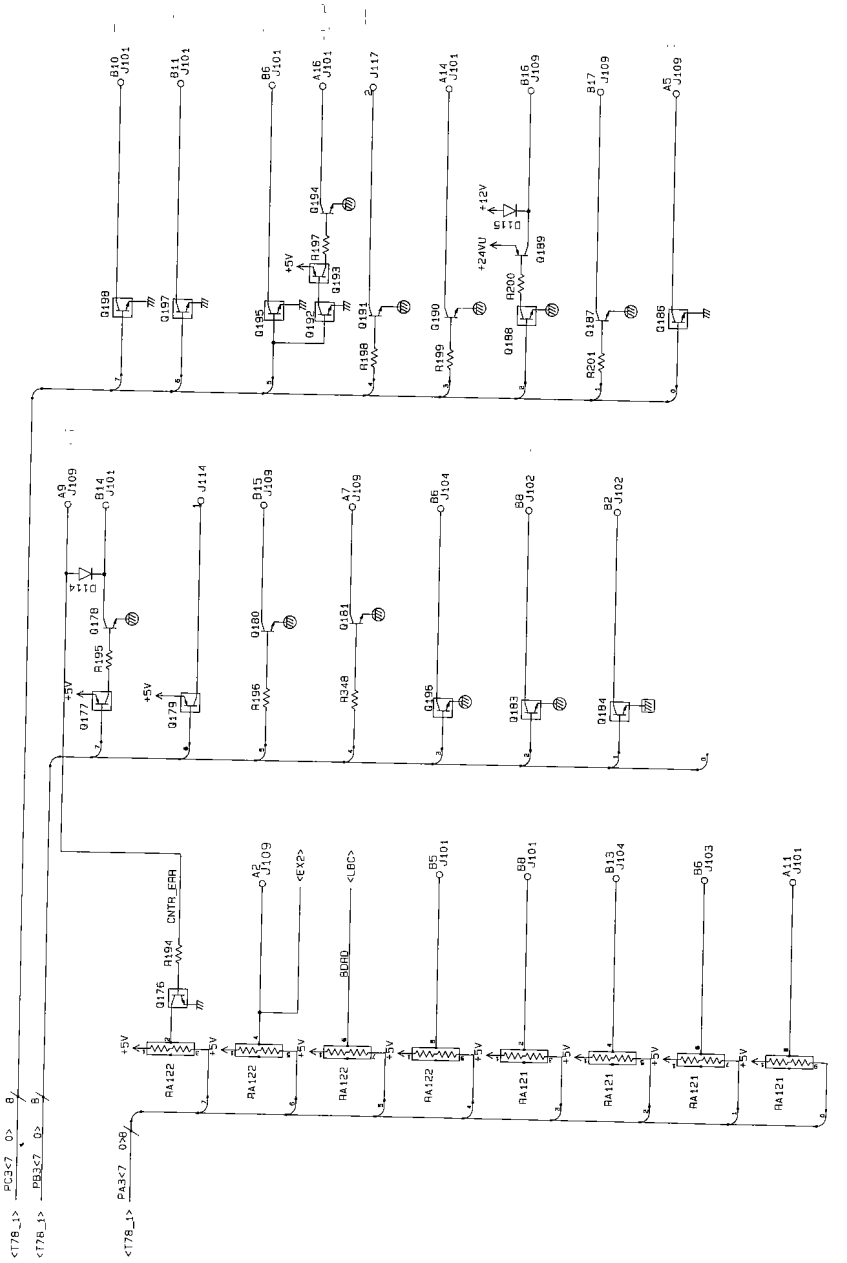
DC controller (NP-4835) 11/20 (EX2)



DC controller (NP-4835) 12/20 (EX3)



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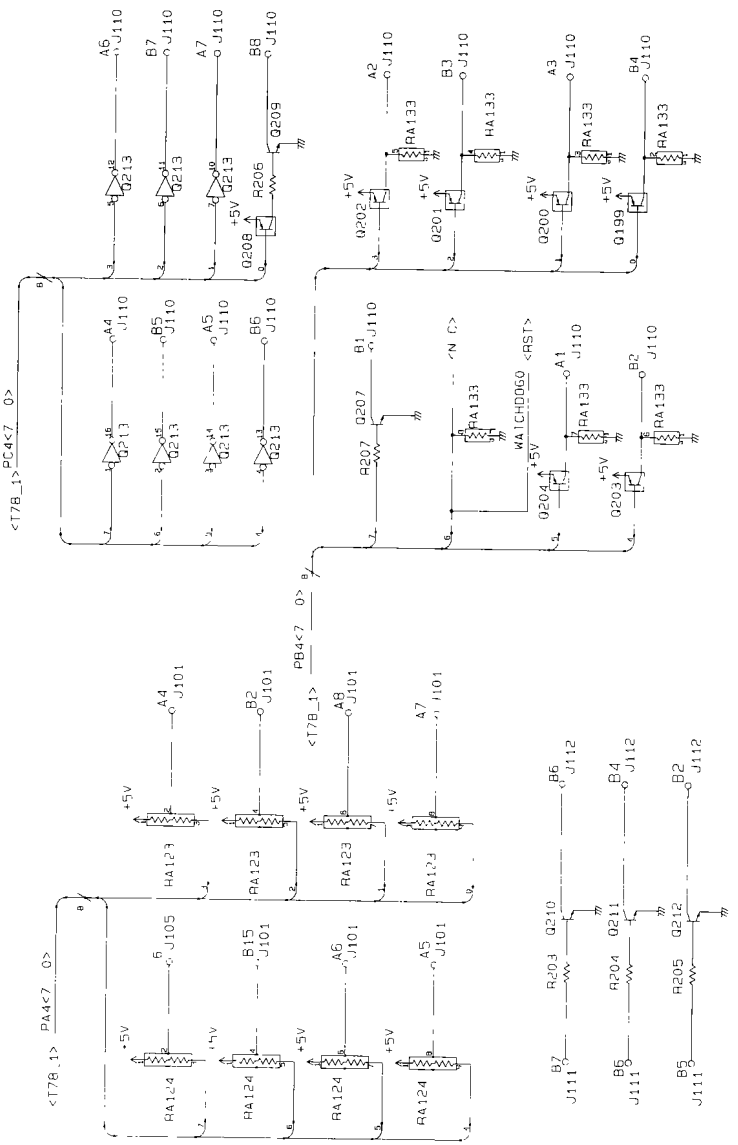
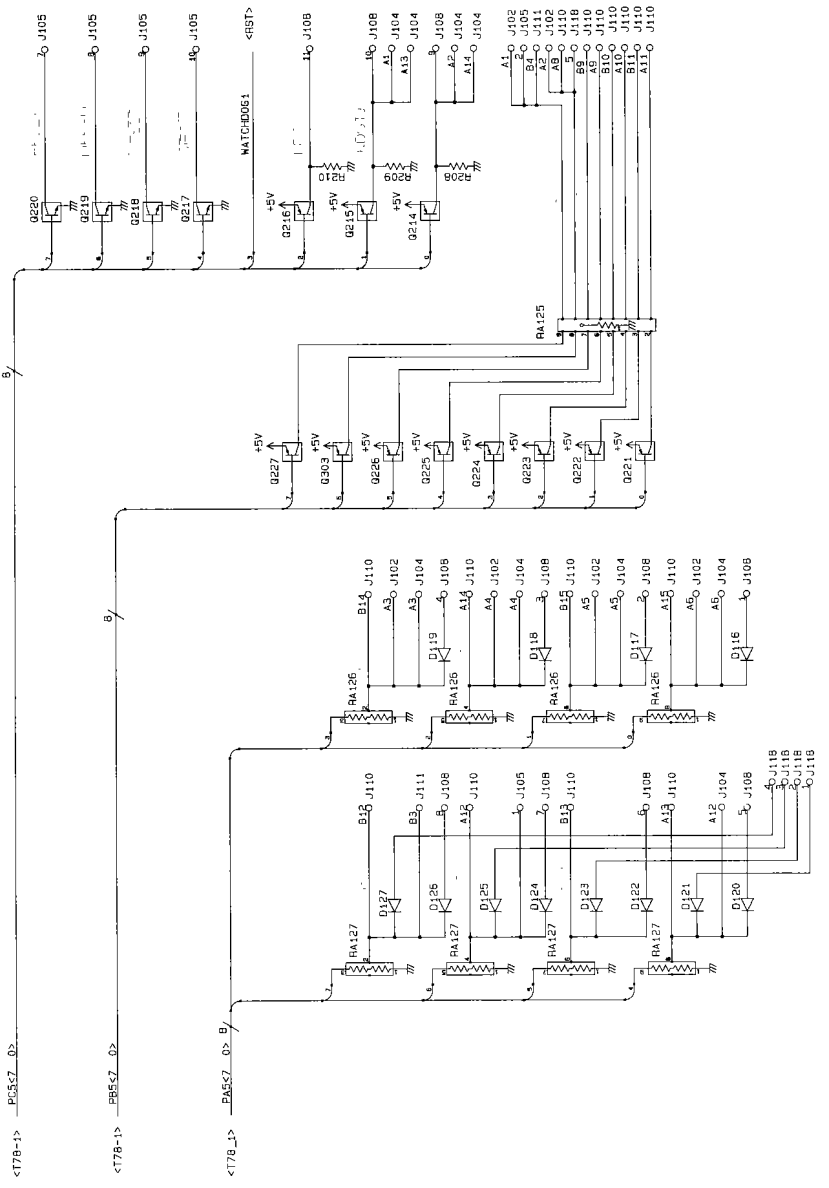
DC controller (NP-4835) 13/20 (EX4)





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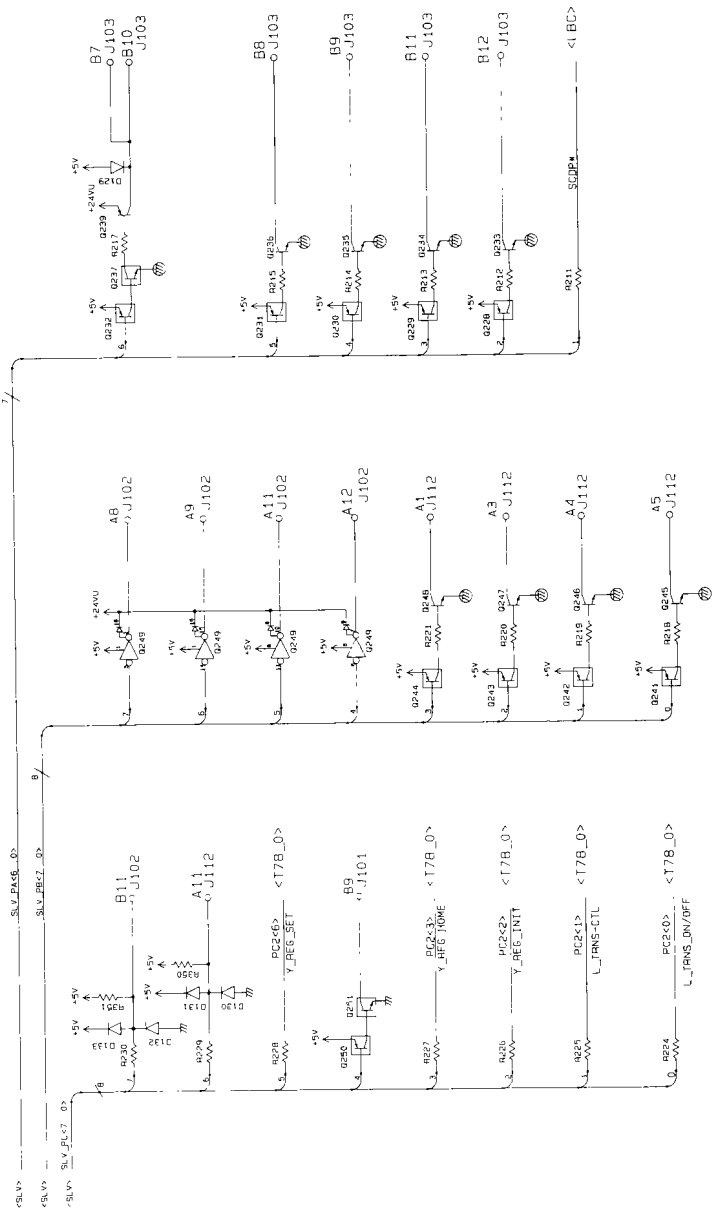

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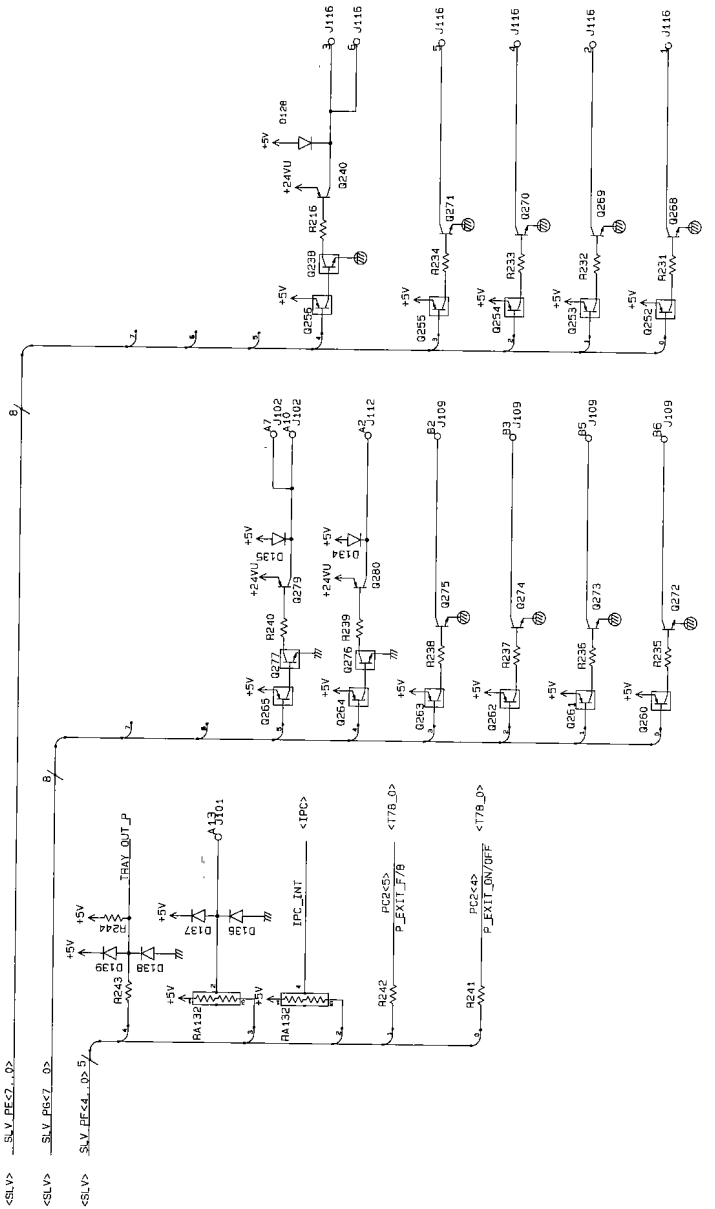

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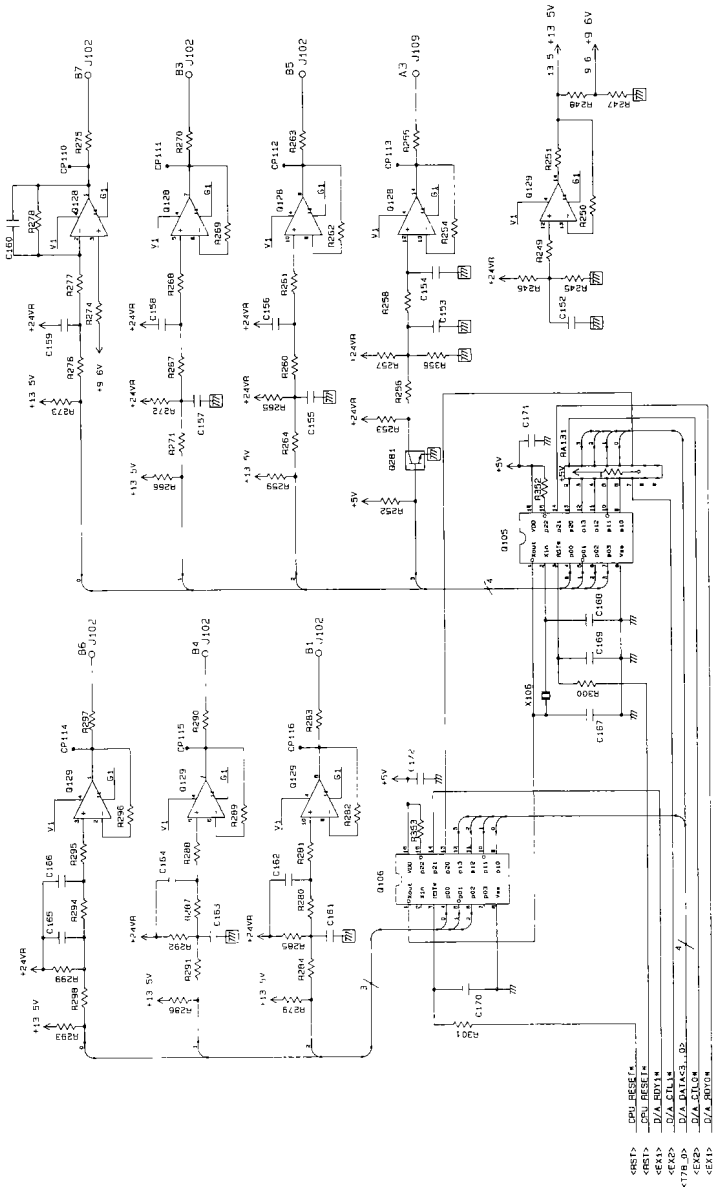
DC controller (NP-4835) 17/20 (HVT: Analog signals for high voltage)



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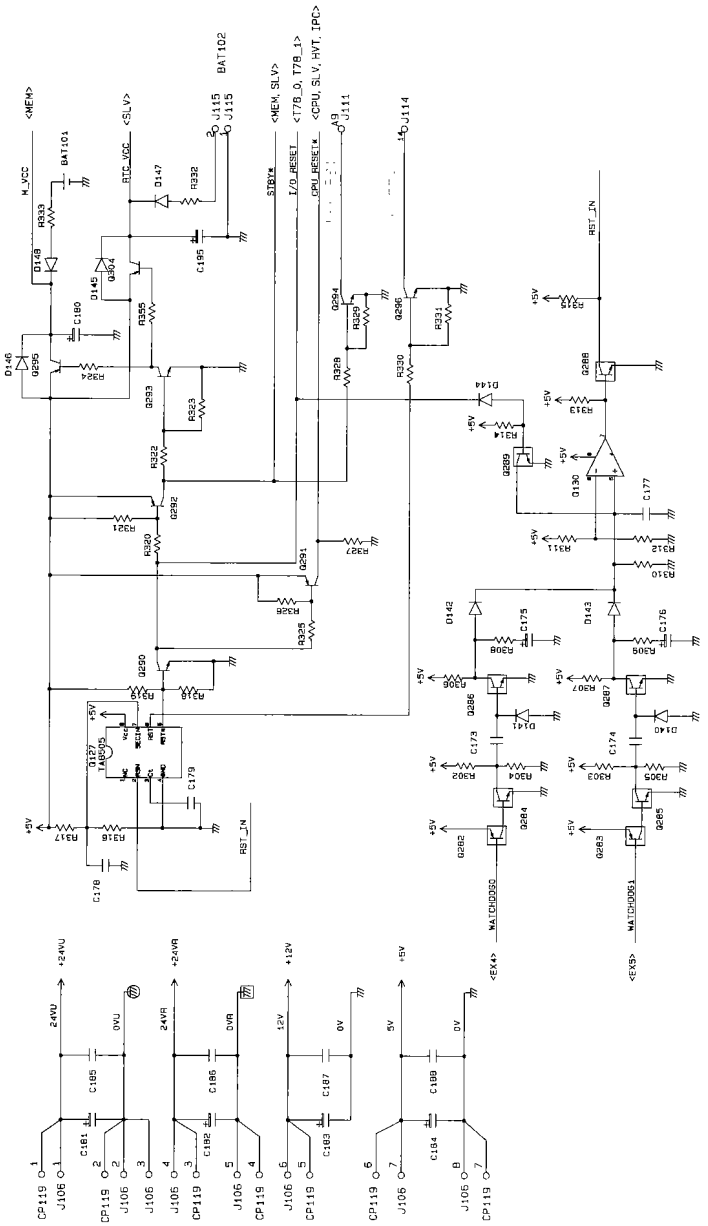
DC controller (NP-4835) 18/20 (RST: Reset circuit)



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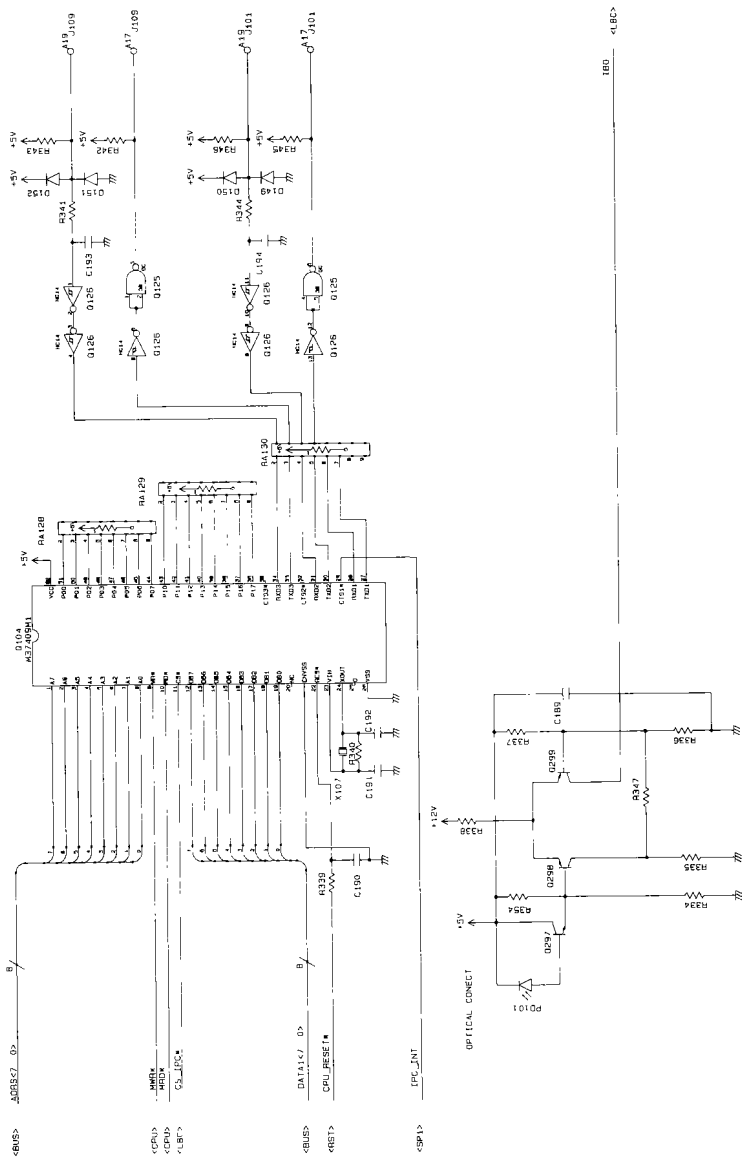
DC controller (NP-4835) 19/20 (IPC: Interface to Editor/DF/Sorter)



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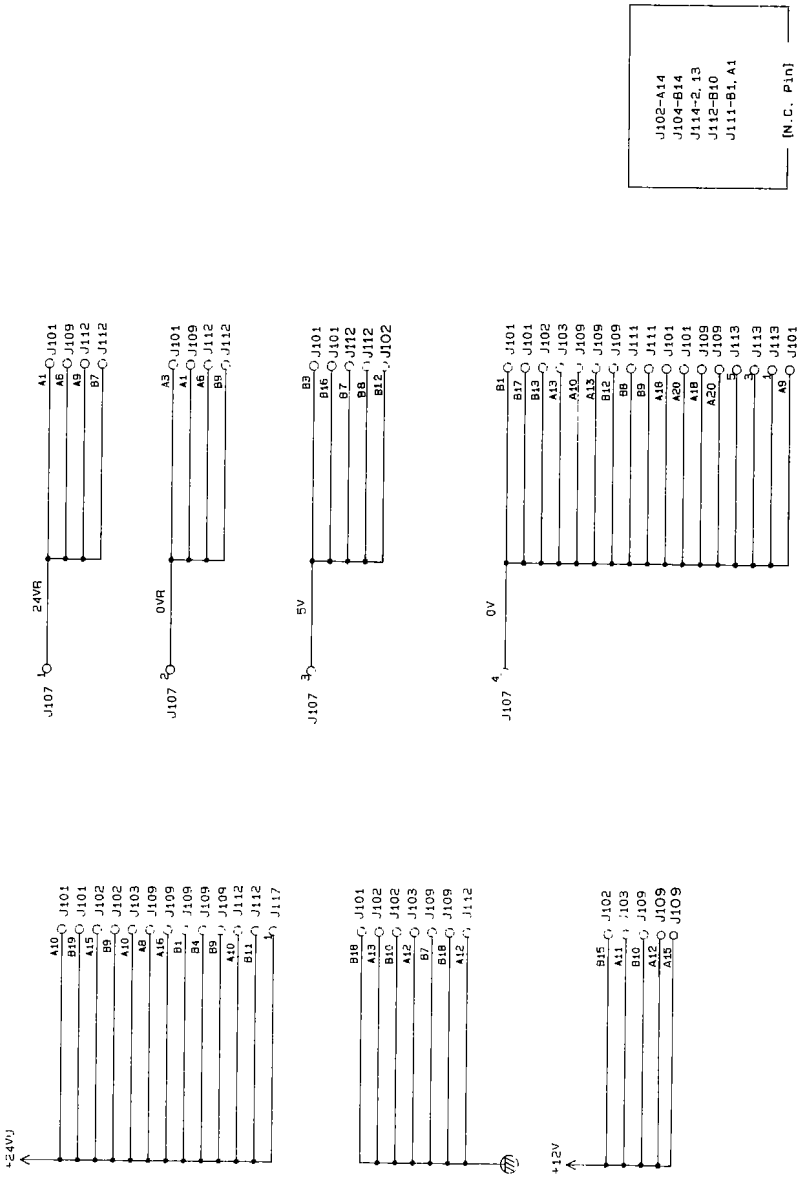
DC controller (NP-4835) 20/20 (POWER: DC power)



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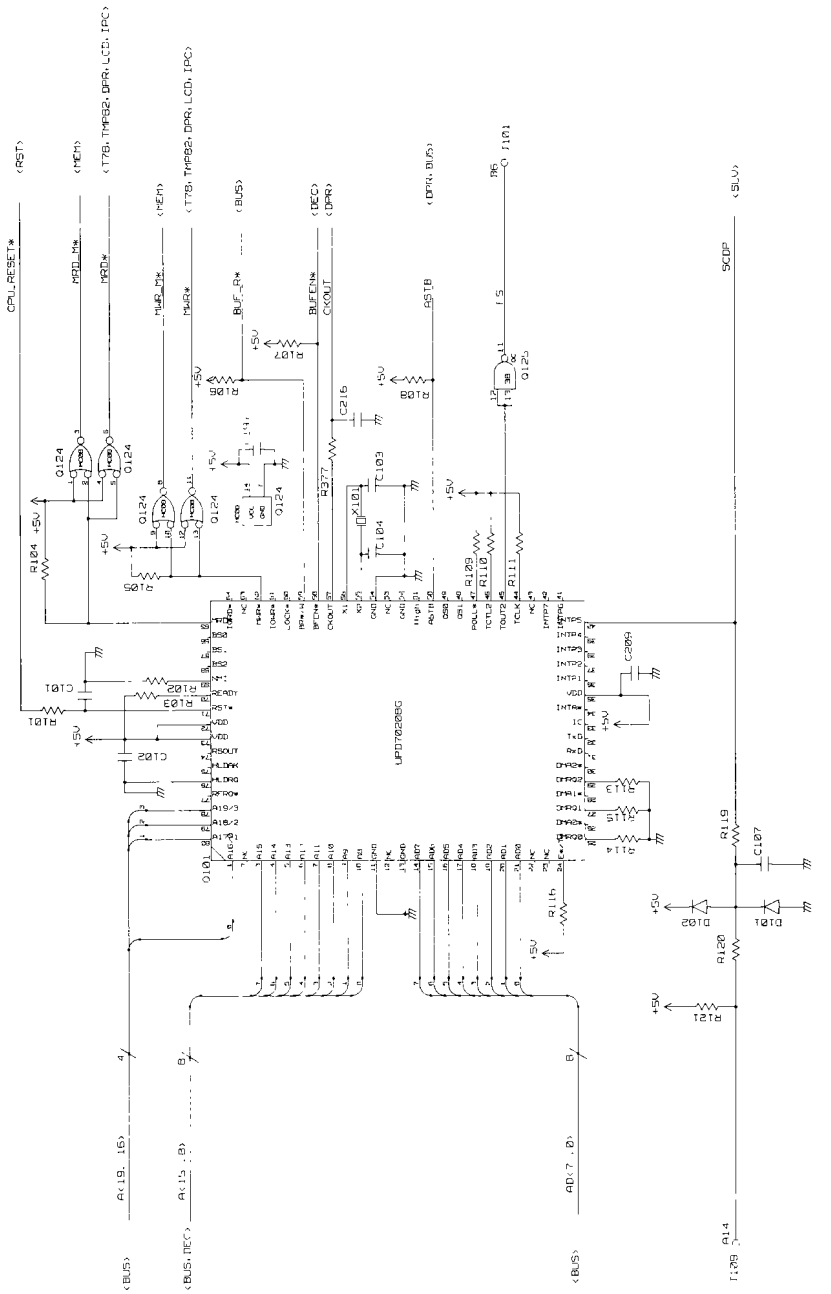
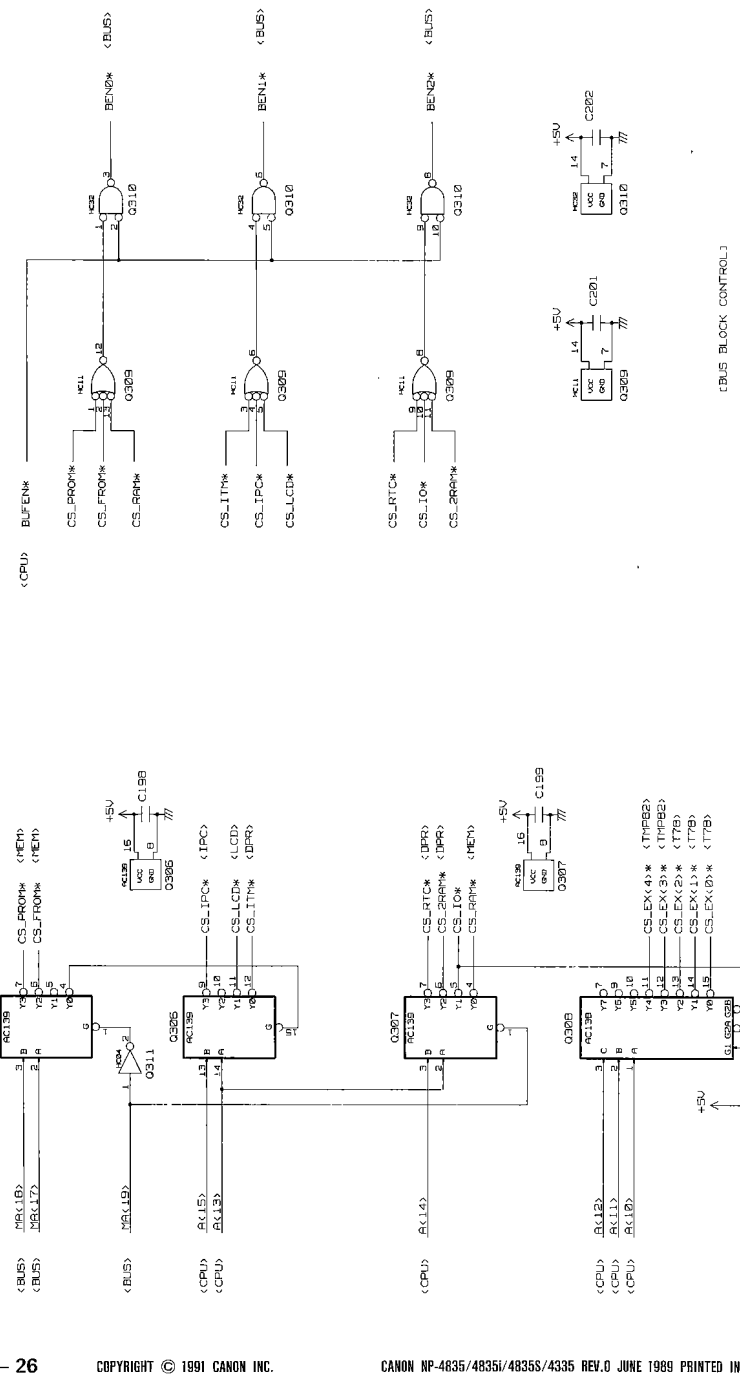
4A. DC CONTROLLER (NP-4835S/4335)

DC controller (NP-4835S/4335) 1/19 (CPU: Main CPU)



DC controller (NP-4835S/4335) 2/19 (DEC: Generation of chip select signal)



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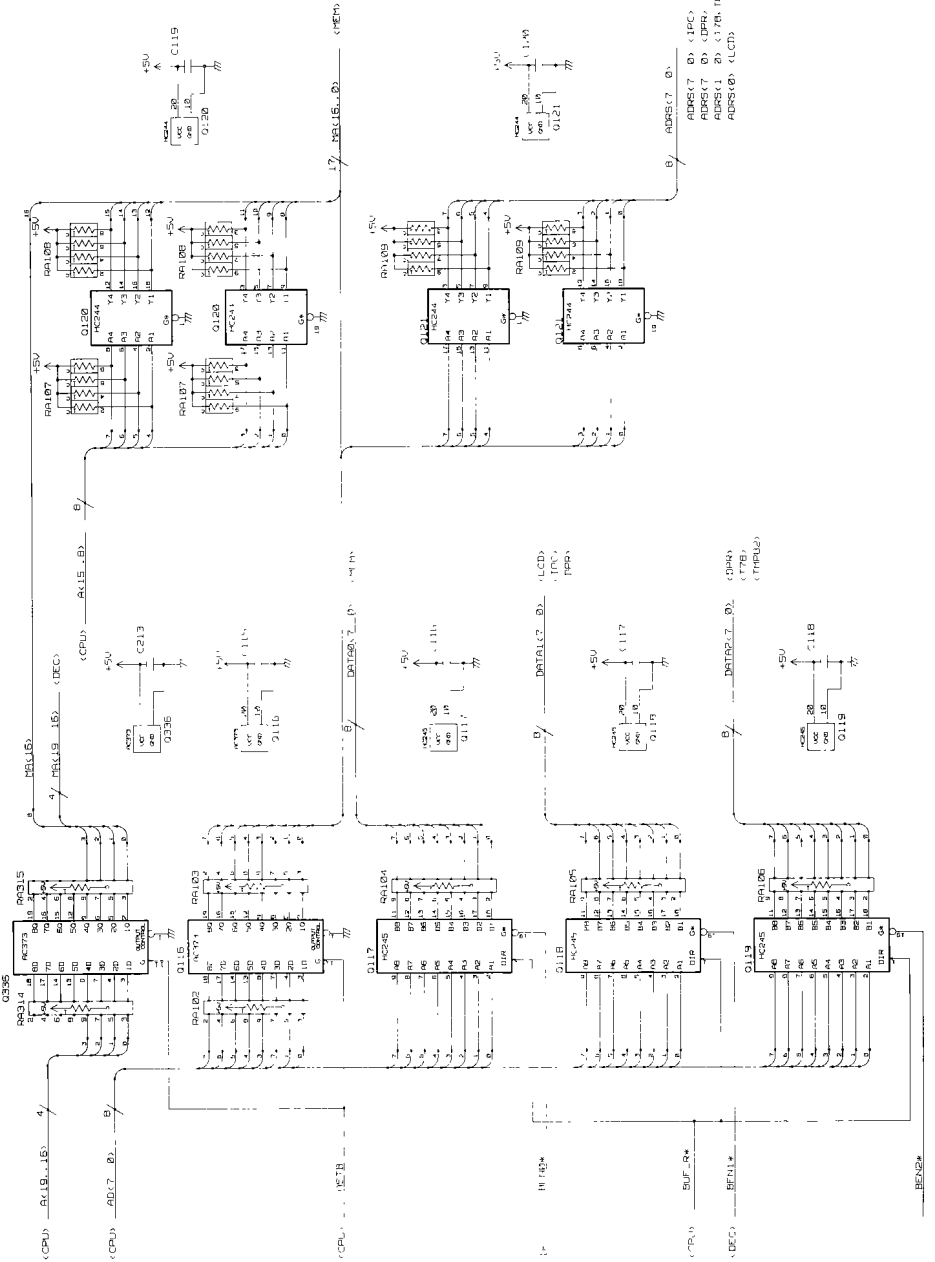
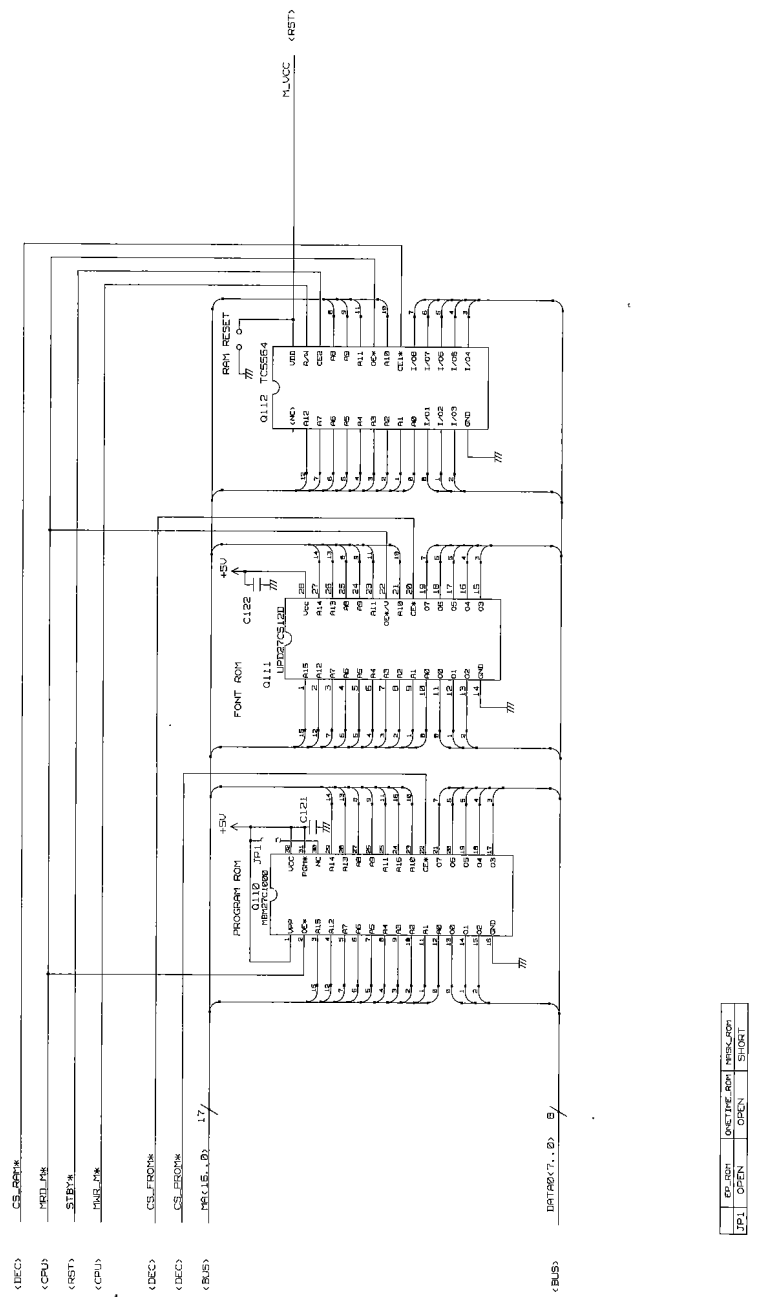
DC controller (NP-4835S/4335) 3/19 (BUS: Bus line control)



DC controller (NP-4835S/4335) 4/19 (MEM: ROM, RAM)



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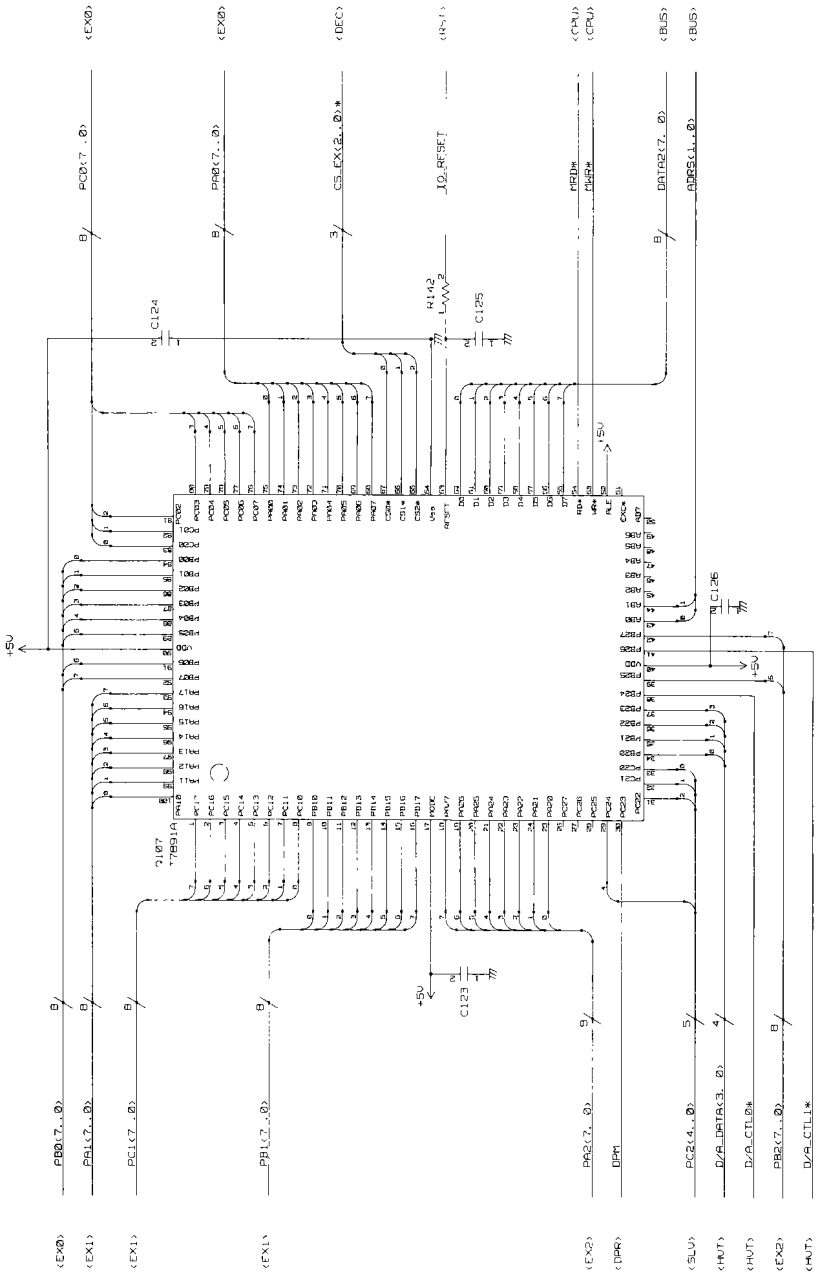
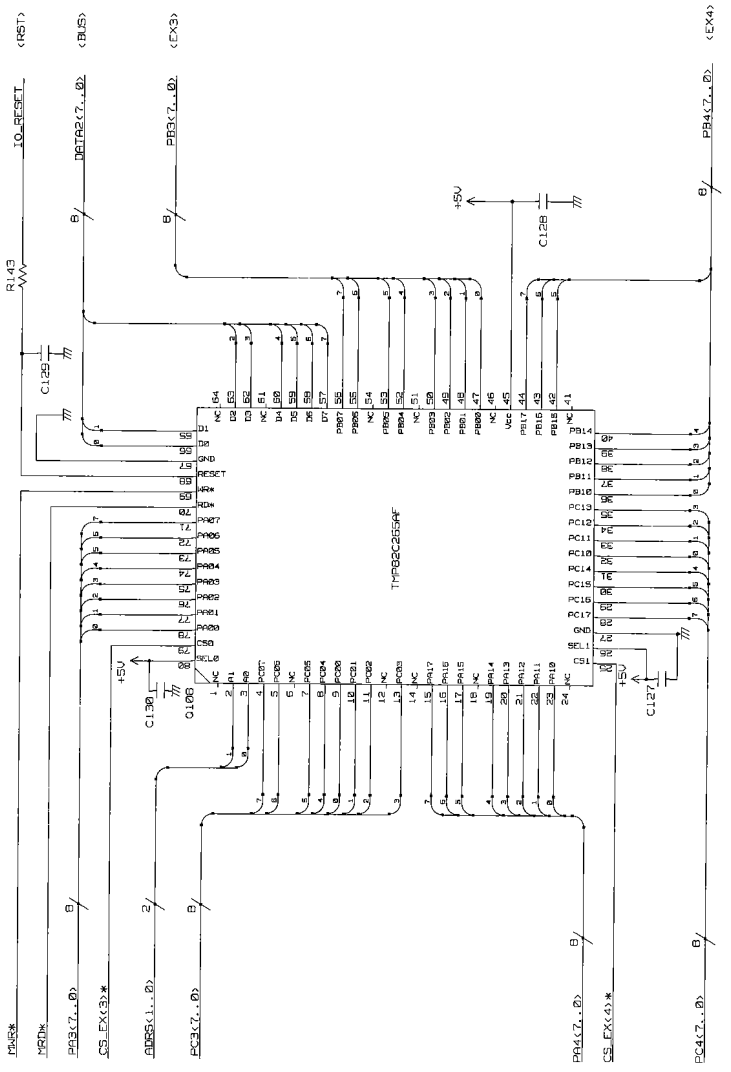
DC controller (NP-4835S/4335) 5/19 (T78: I/O expander 1)



DC controller (NP-4835S/4335) 6/19 (TMP82: I/O expander 2)



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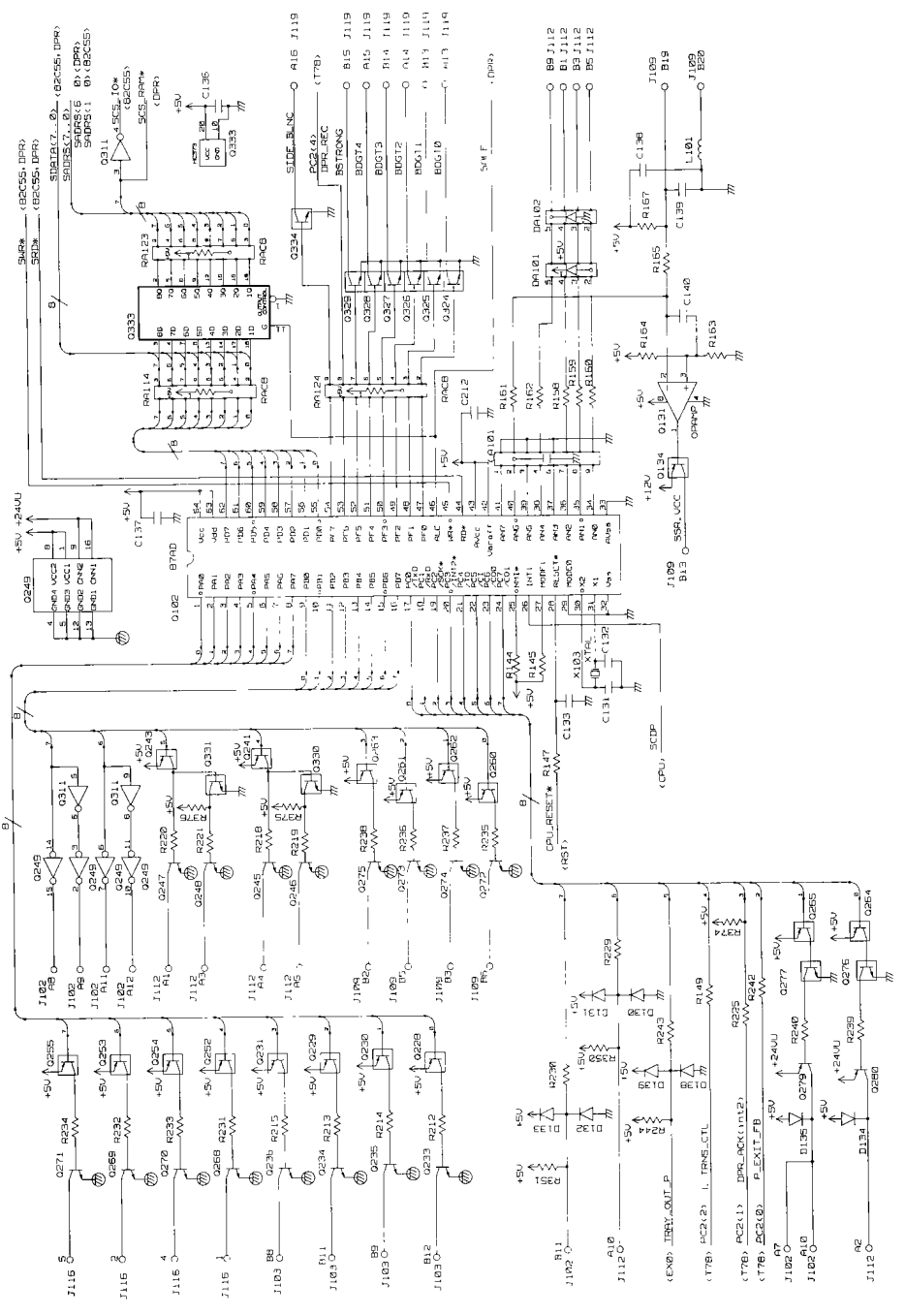
DC controller (NP-4835S/4335) 7/19 (SLV: Sub CPU)



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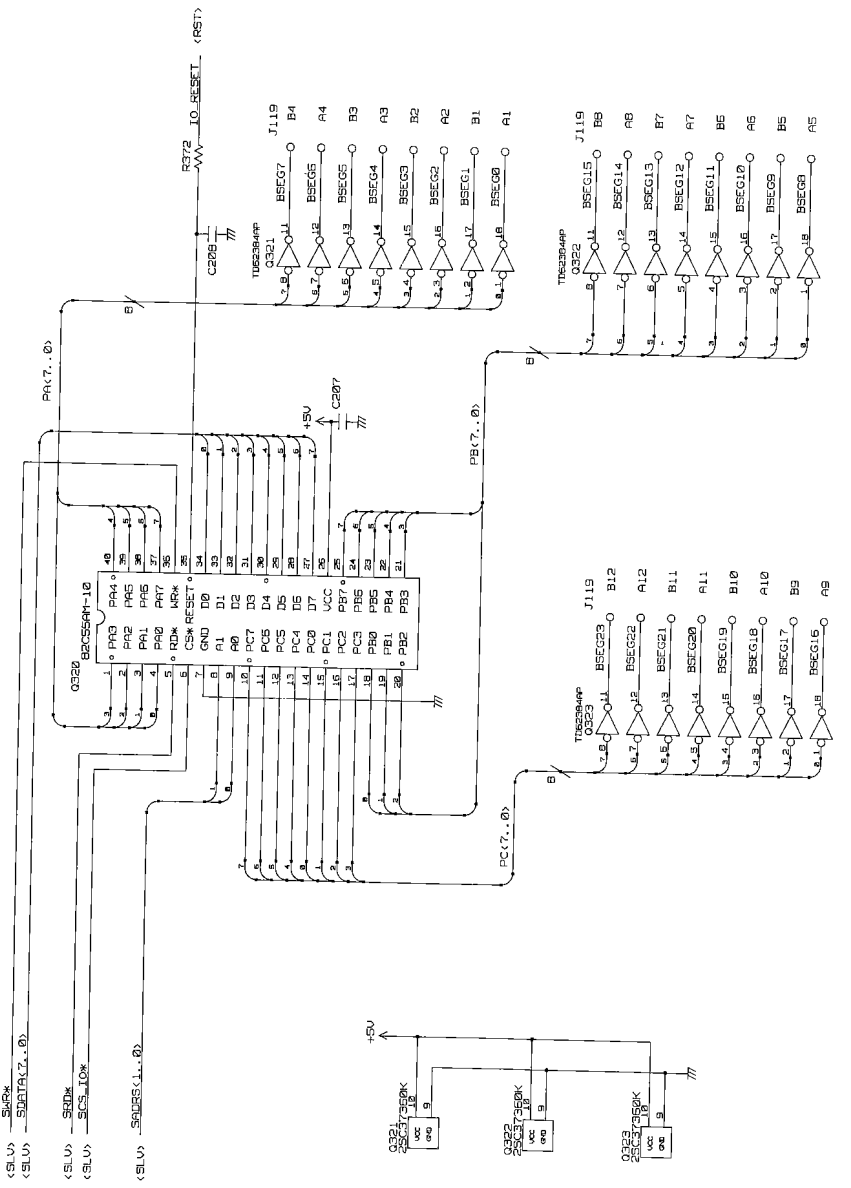
DC controller (NP-4835S/4335) 8/19 (BLANK I/O: Blank exposure control)



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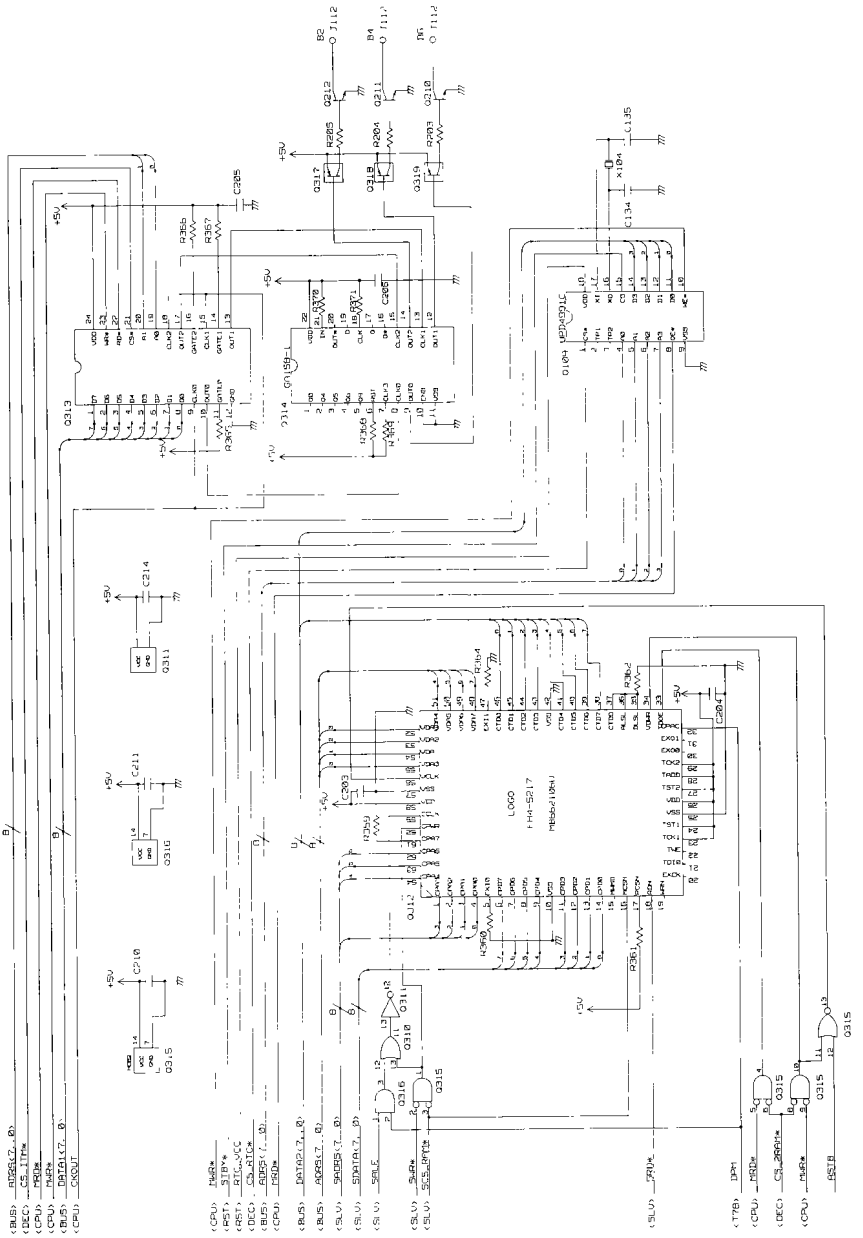
DC controller (NP-4835S/4335) 9/19 (DPR: Dual port RAM)



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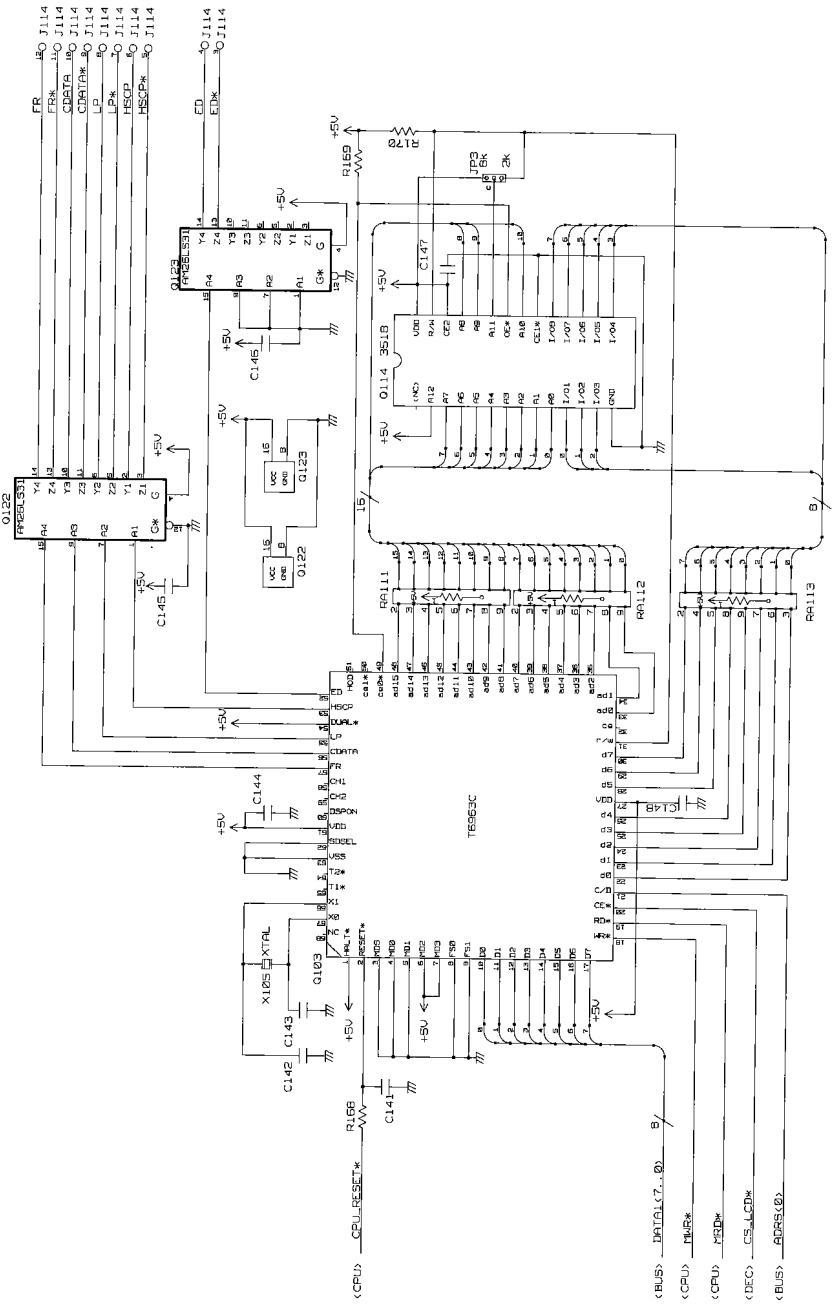
DC controller (NP-4835S/4335) 10/19 (LCD: Liquid crystal display control)



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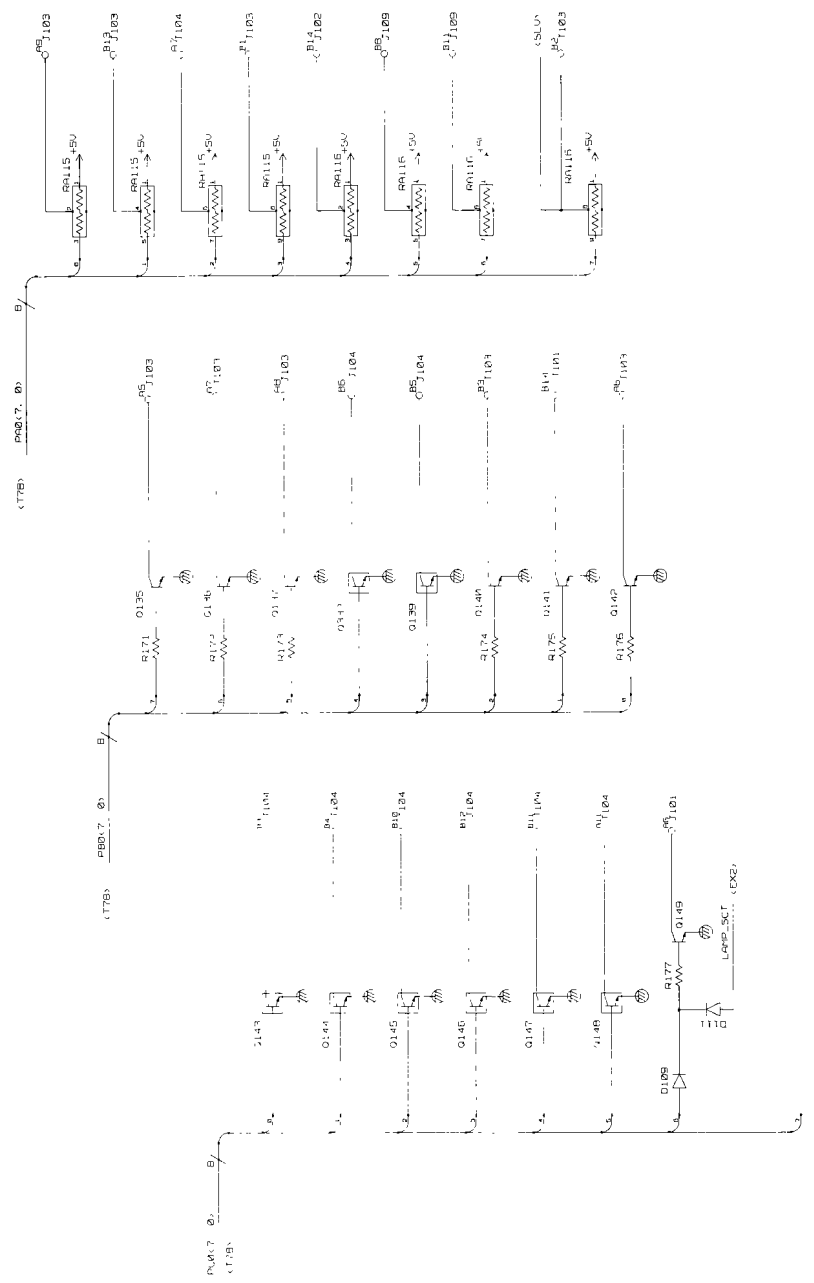
DC controller (NP-4835S/4335) 11/19 (EXO)



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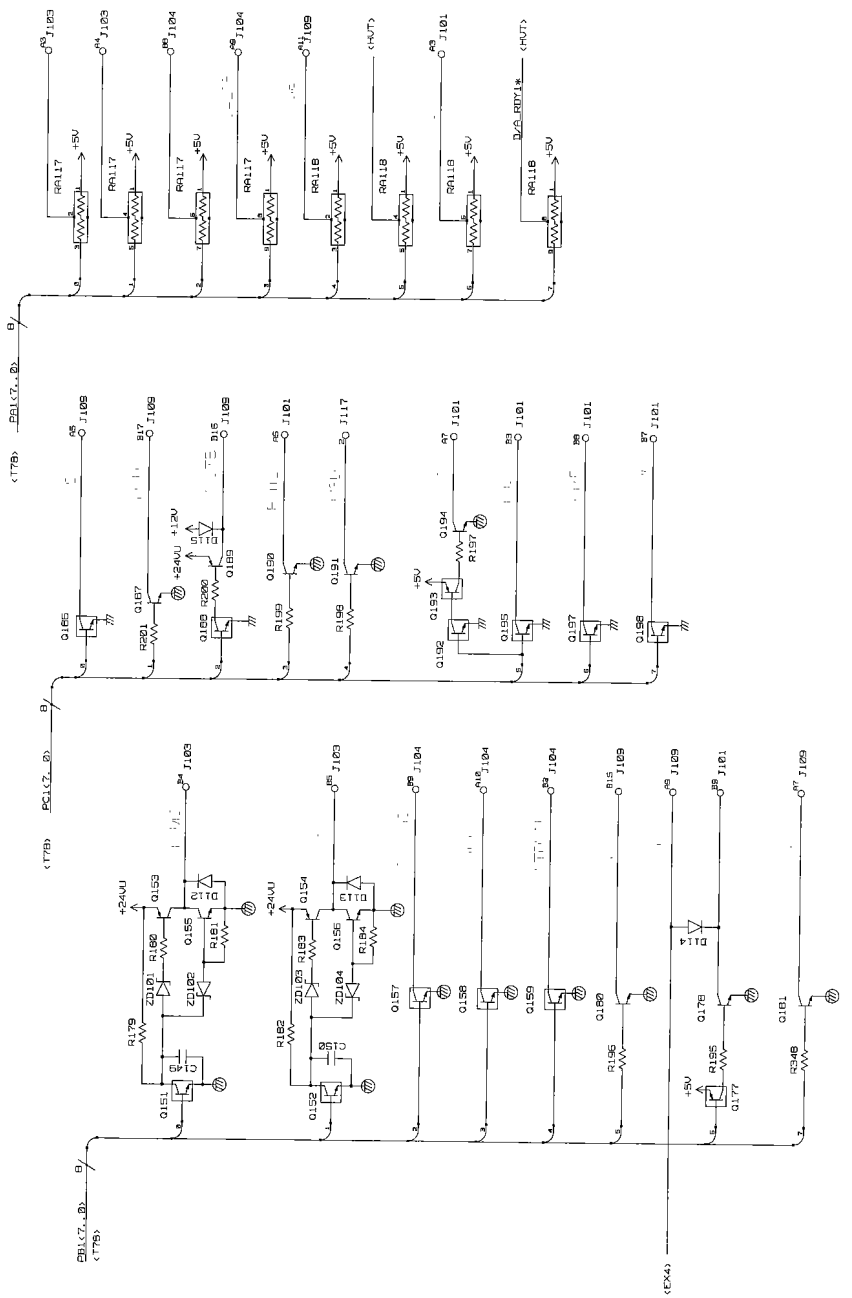
DC controller (NP-4835S/4335) 12/19 (EX1)



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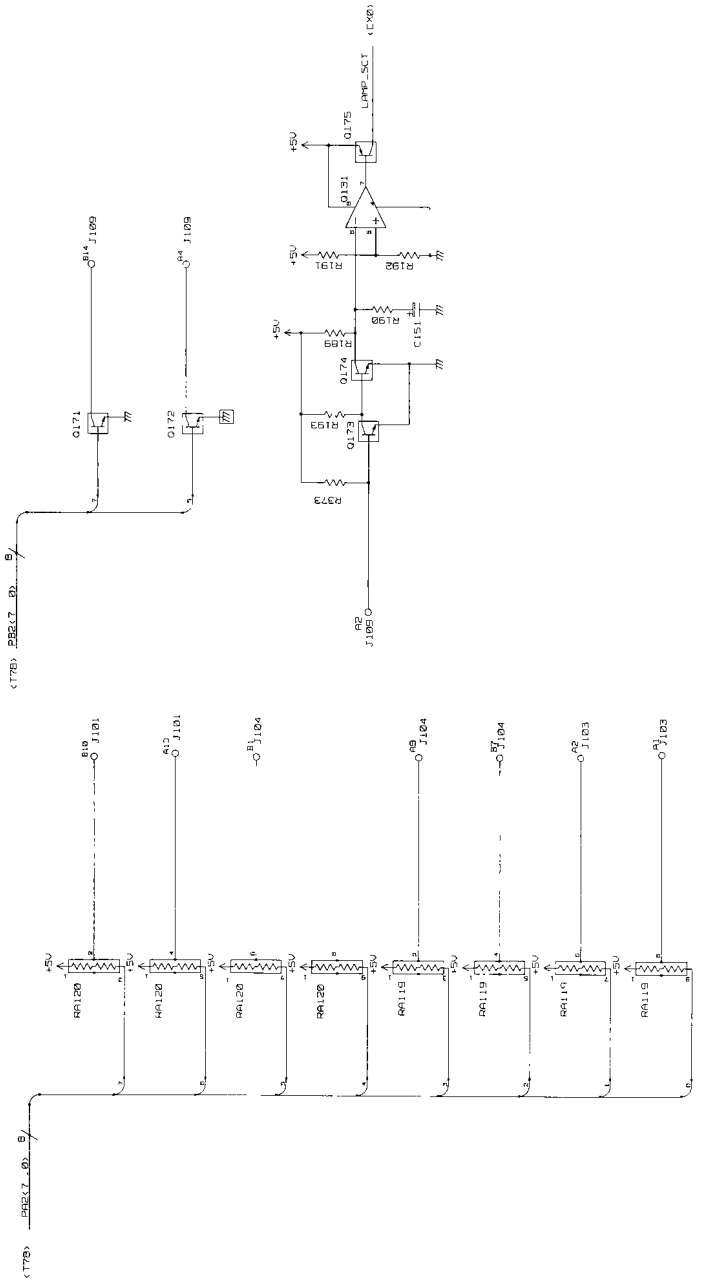
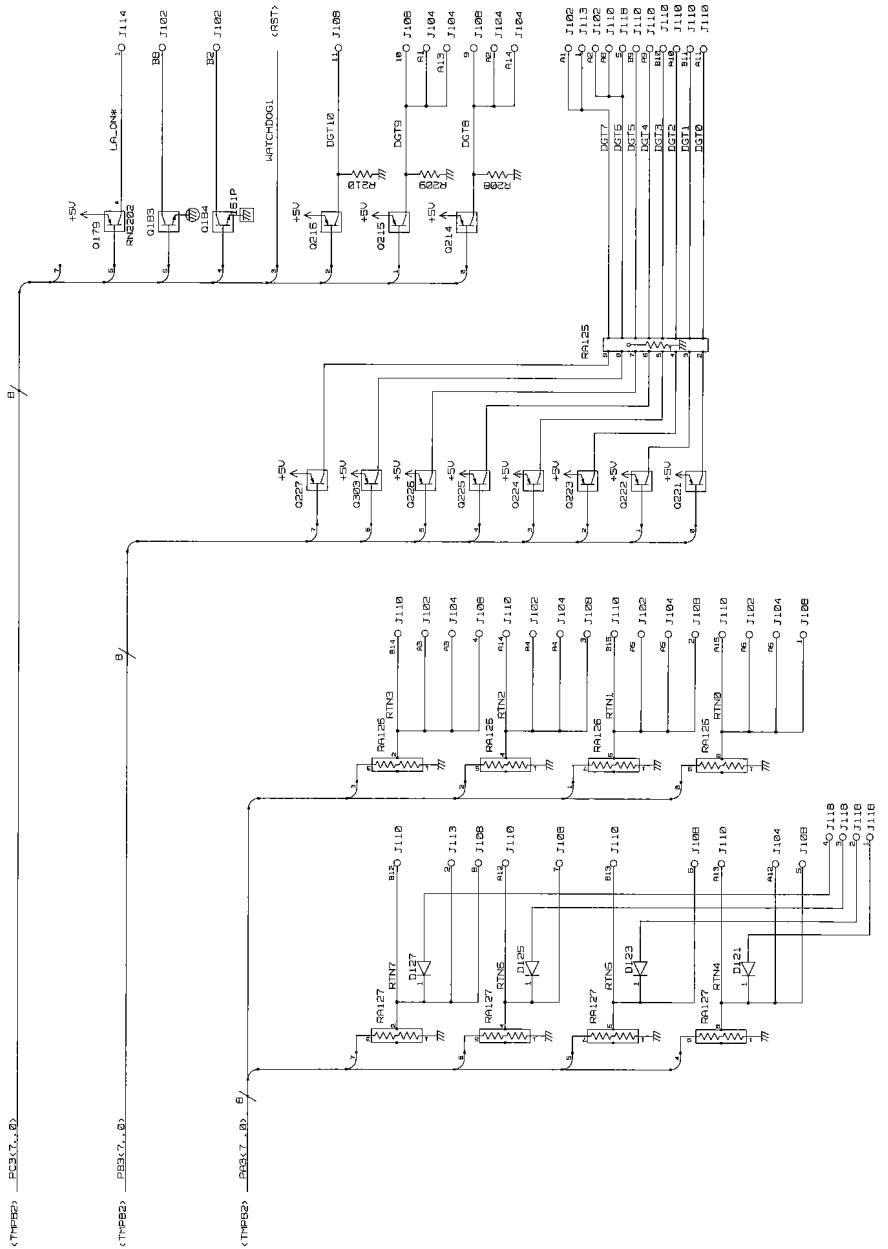
DC controller (NP-4835S/4335) 13/19 (EX2)



DC controller (NP-4835S/4335) 14/19 (EX3)



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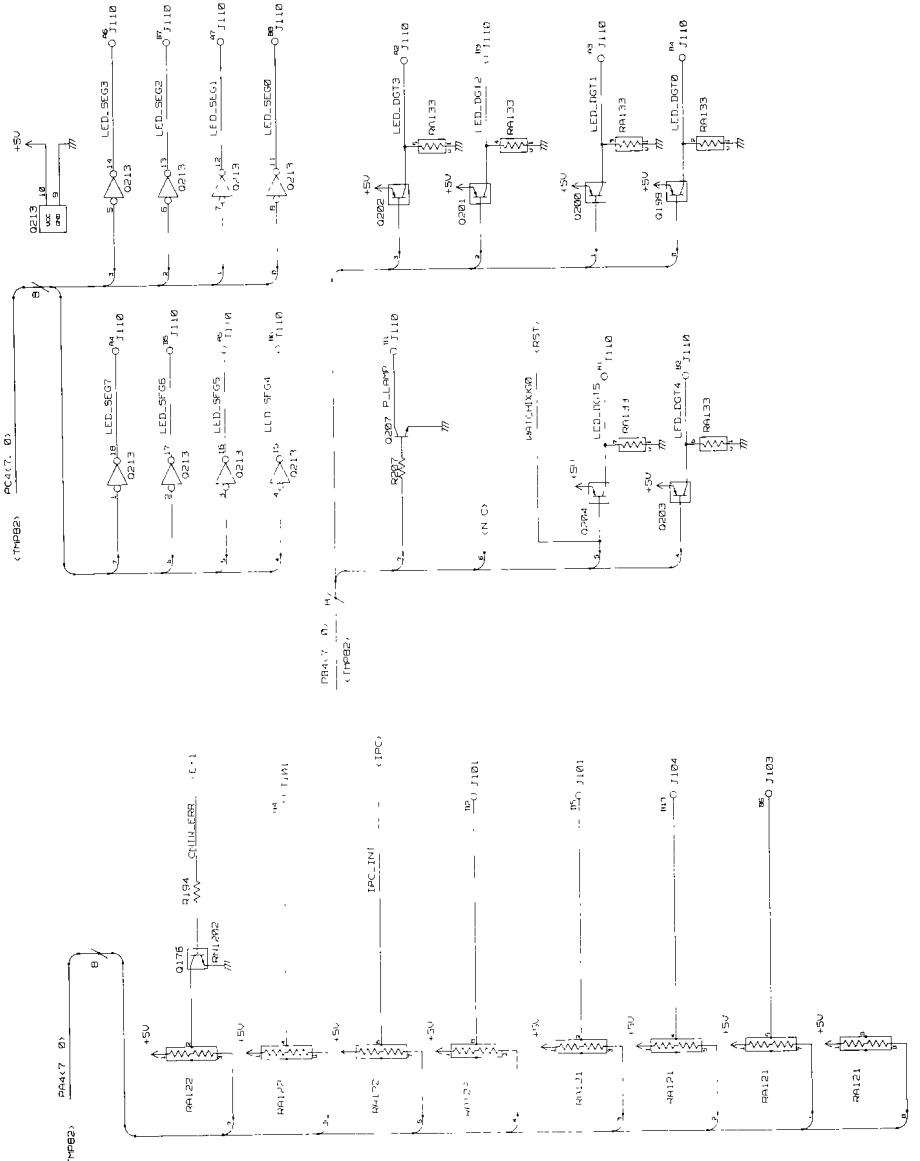
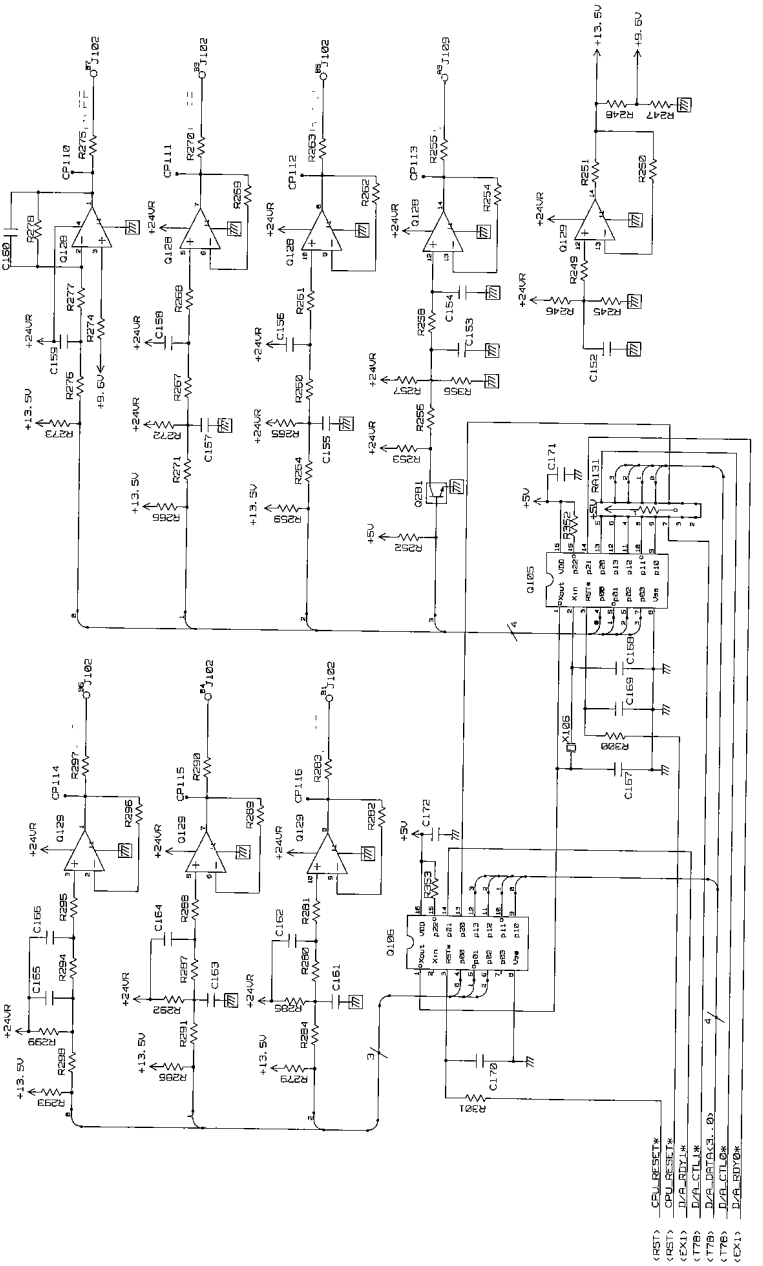
DC controller (NP-4835S/4335) 15/19 (EX4)



DC controller (NP-4835S/4335) 16/19 (HVT: Analog signals for high voltage)



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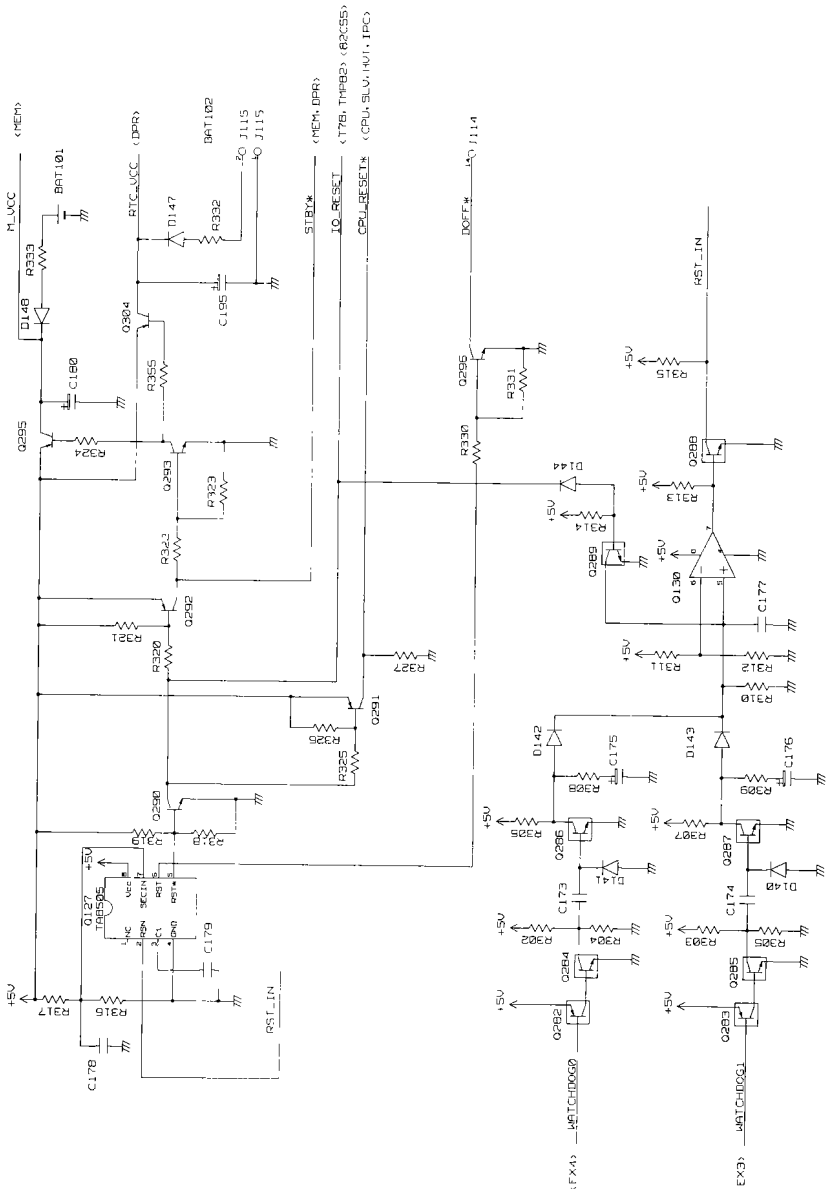
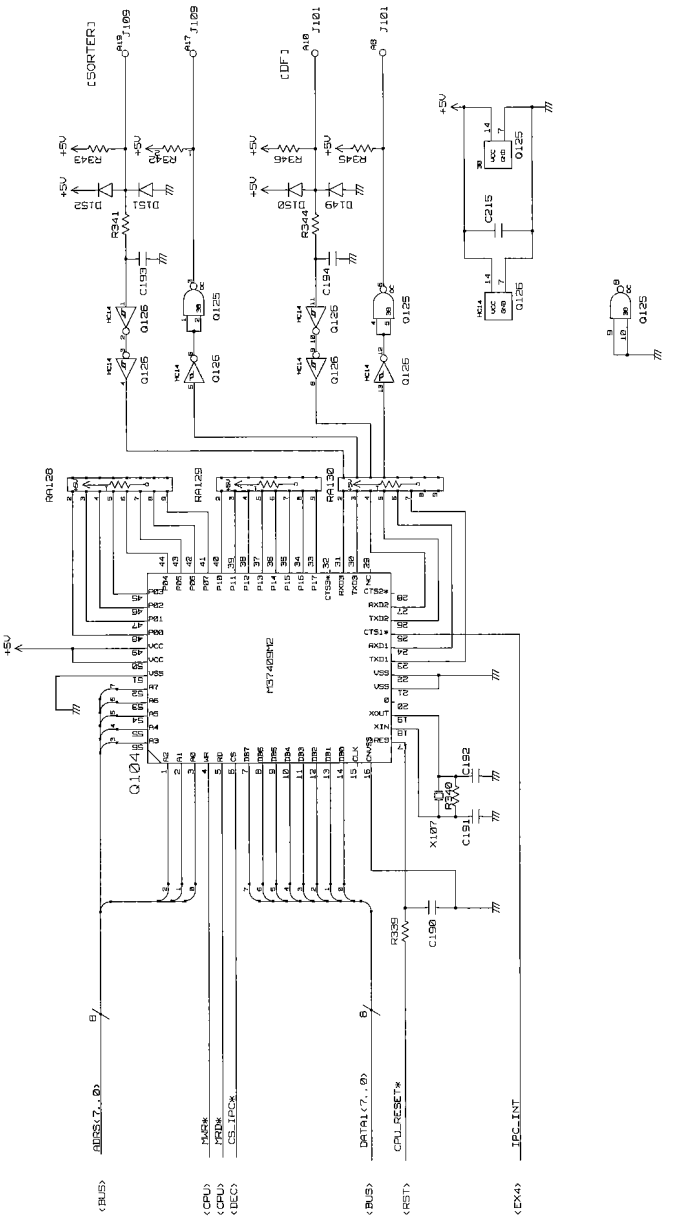
DC controller (NP-4835S/4335) 17/19 (RST: Reset circuit)



DC controller (NP-4835S/4335) 18/19 (IPC: Interface to DF/Sorter)



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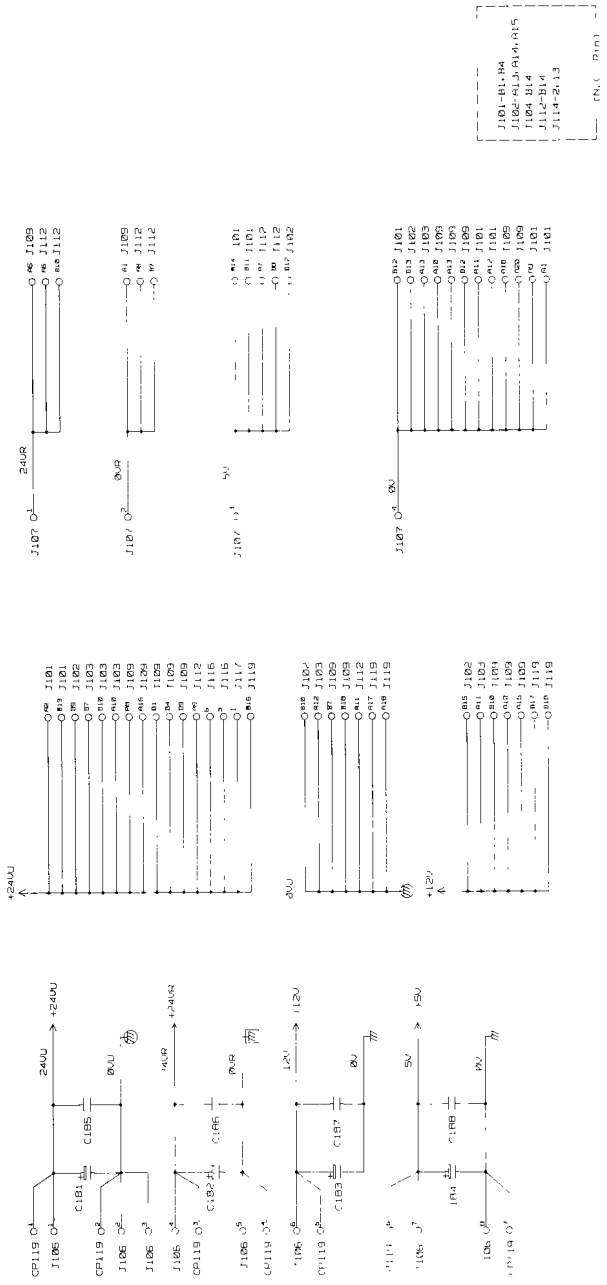
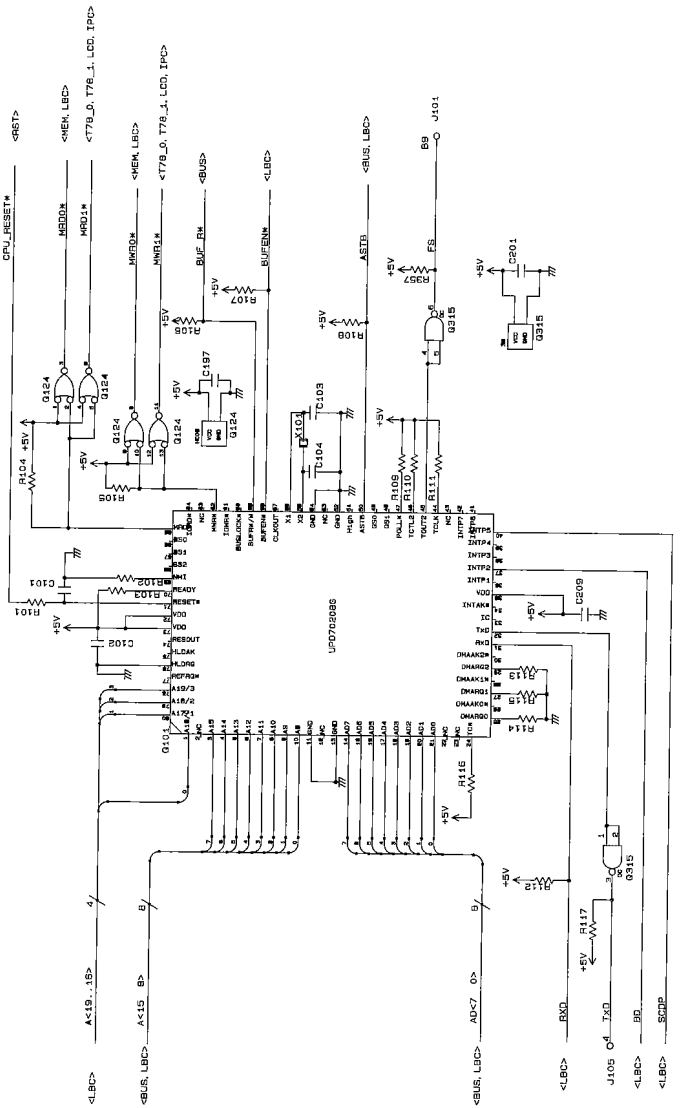
DC controller (NP-4835S/4335) 19/19 (PWR: DC power)



4B. DC CONTROLLER (NP-4835i)

DC controller (NP-4835i) 1/19 (CPU: Main CPU)



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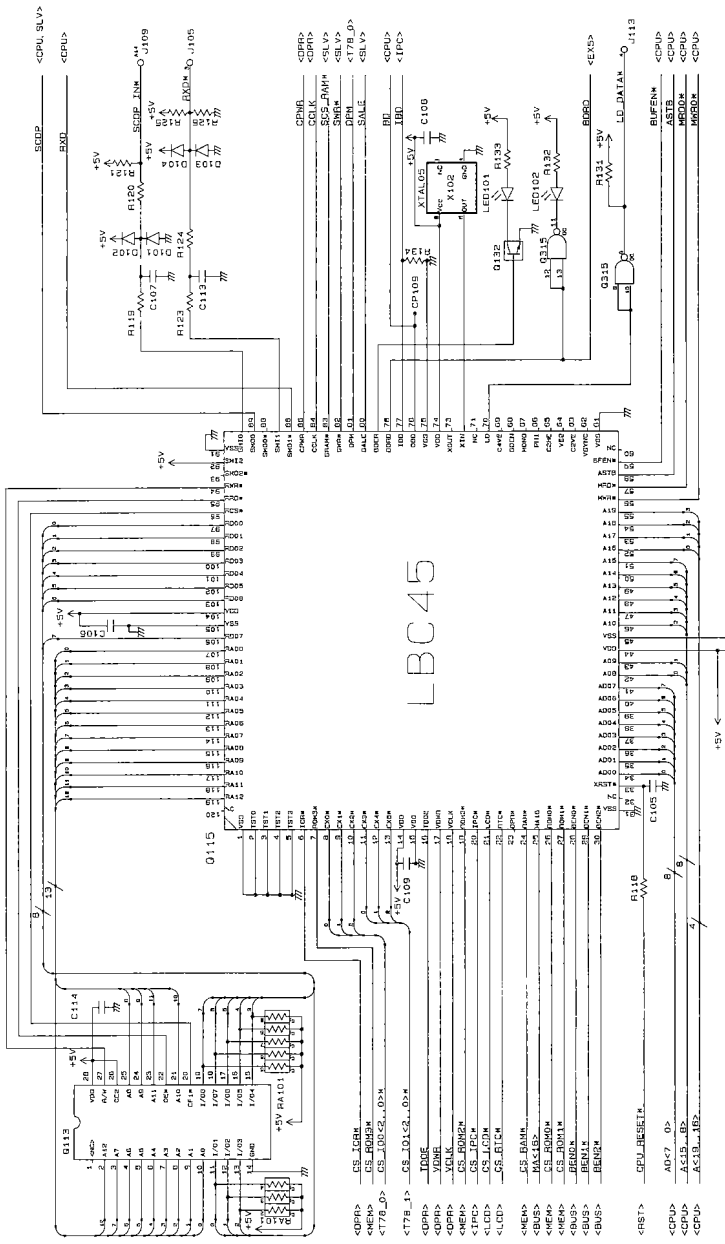
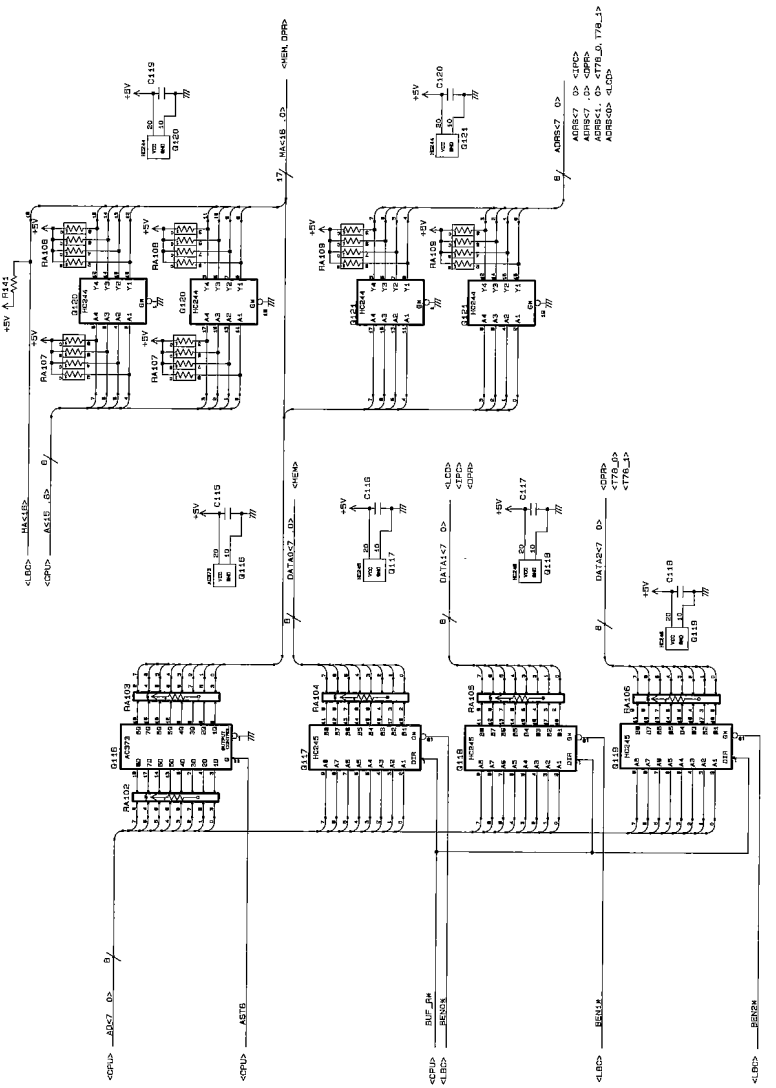
NP-4835i DC controller 2/19 (LBC: Laser control)



DC controller (NP-4835i) 3/19 (BUS: Bus line control)



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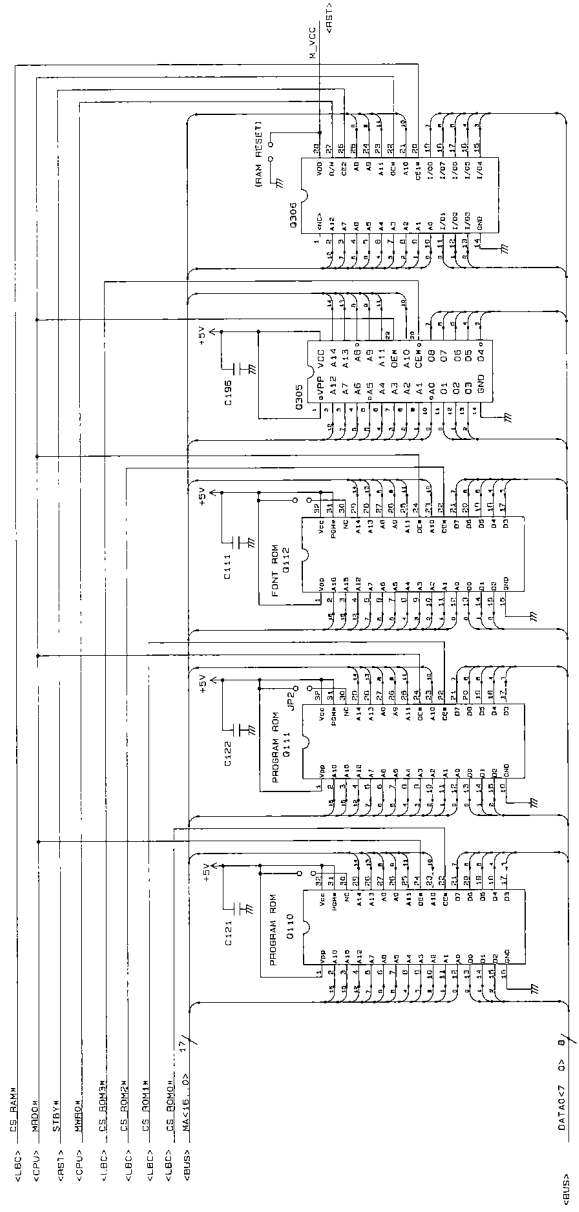
DC controller (NP-4835i) 4/19 (MEM: ROM. RAM)



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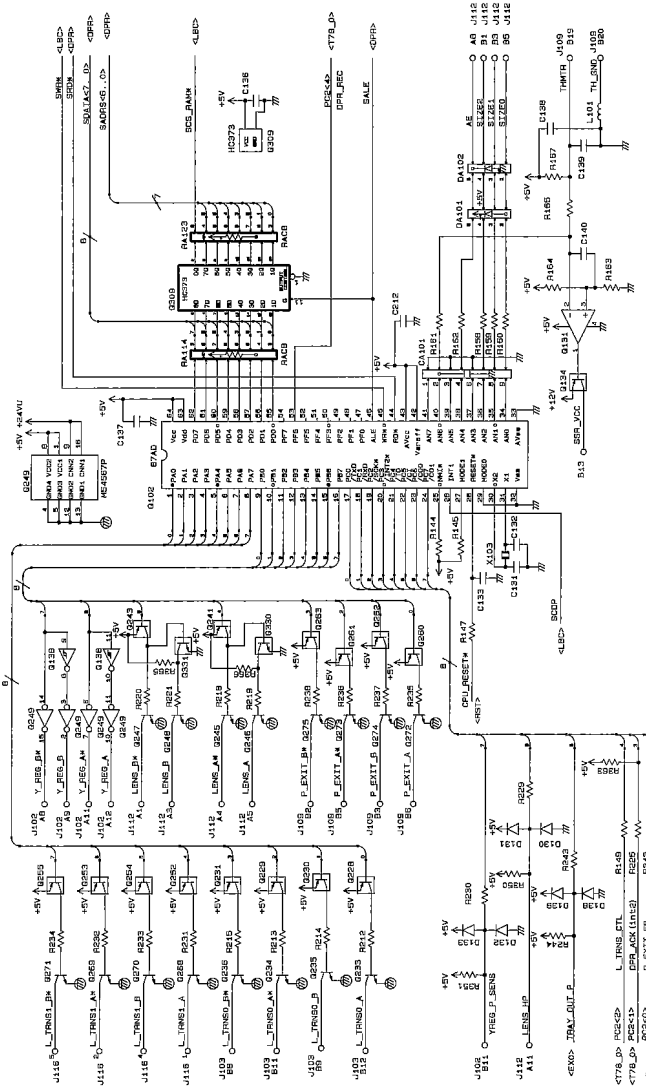
DC controller (NP-4835i) 5/19 (SLV: Sub-CPU)



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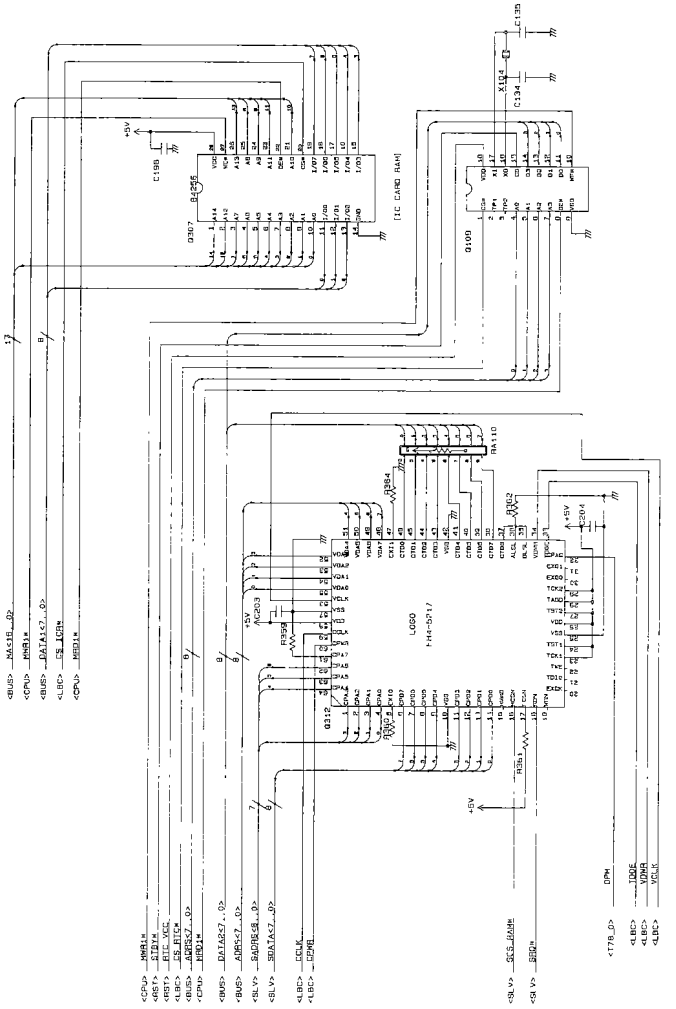
DC controller (NP-4835i) 6/19 (DPR: Dual port RAM)



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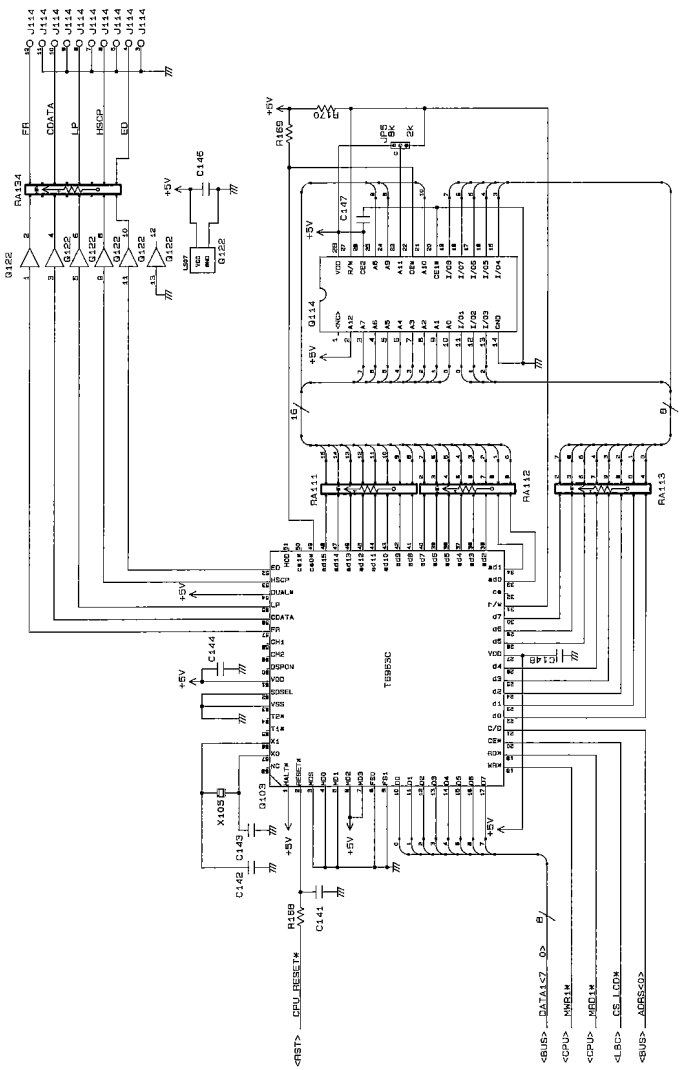
DC controller (NP-4835i) 7/19 (LCD: Liquid crystal display control)



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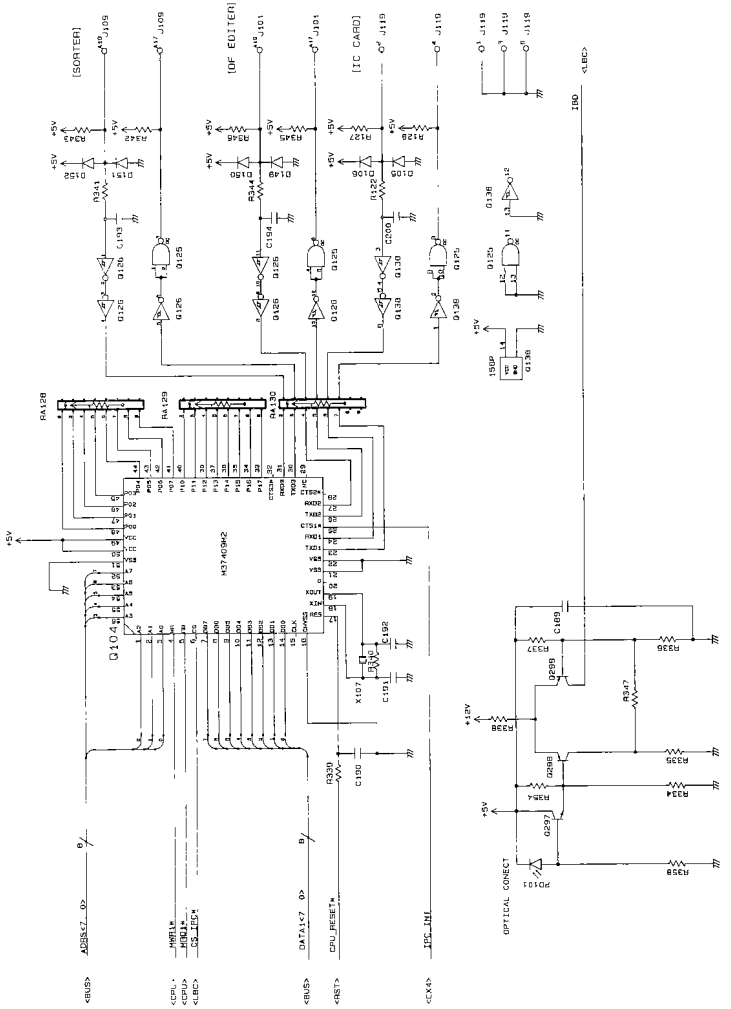
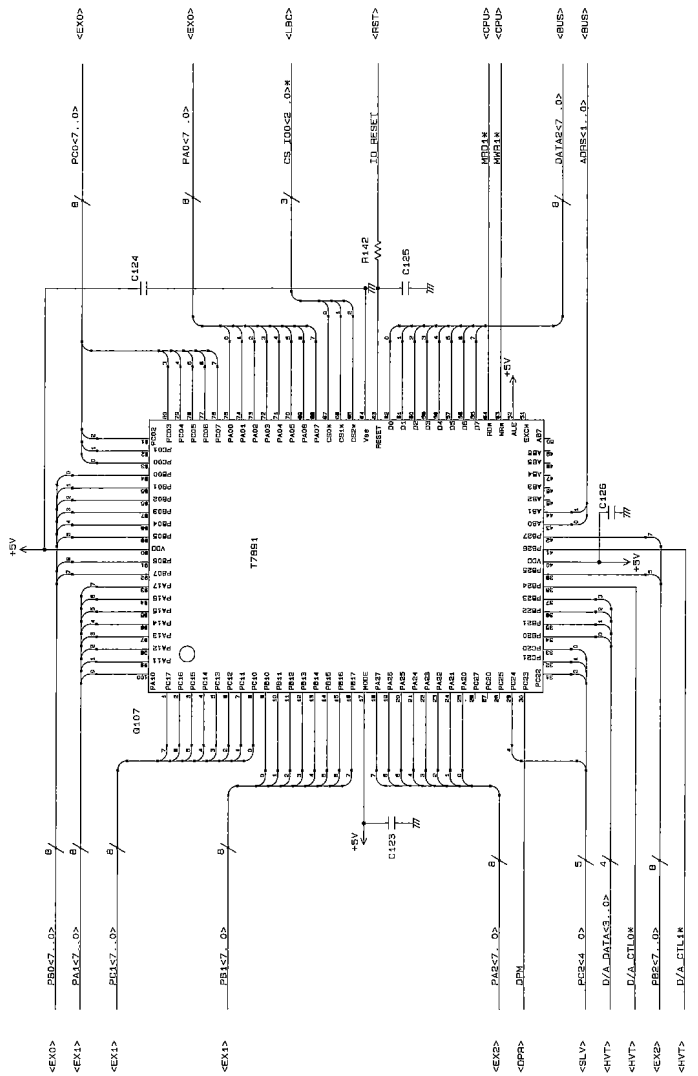
DC controller (NP-4835i) 8/19 (IPC: interface to Editor/DF/Sorter)



DC controller (NP-4835i) 9/19 (T78 0: I/O expander 1)



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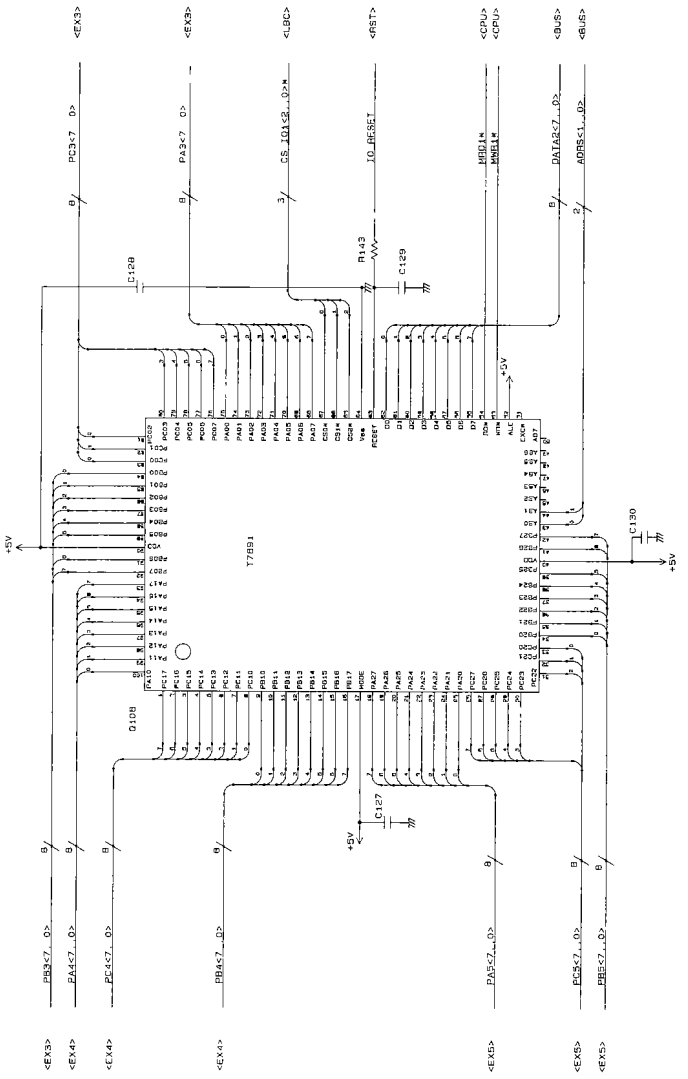
DC controller (NP-4835i) 10/19 (T78 1: I/O expander 2)



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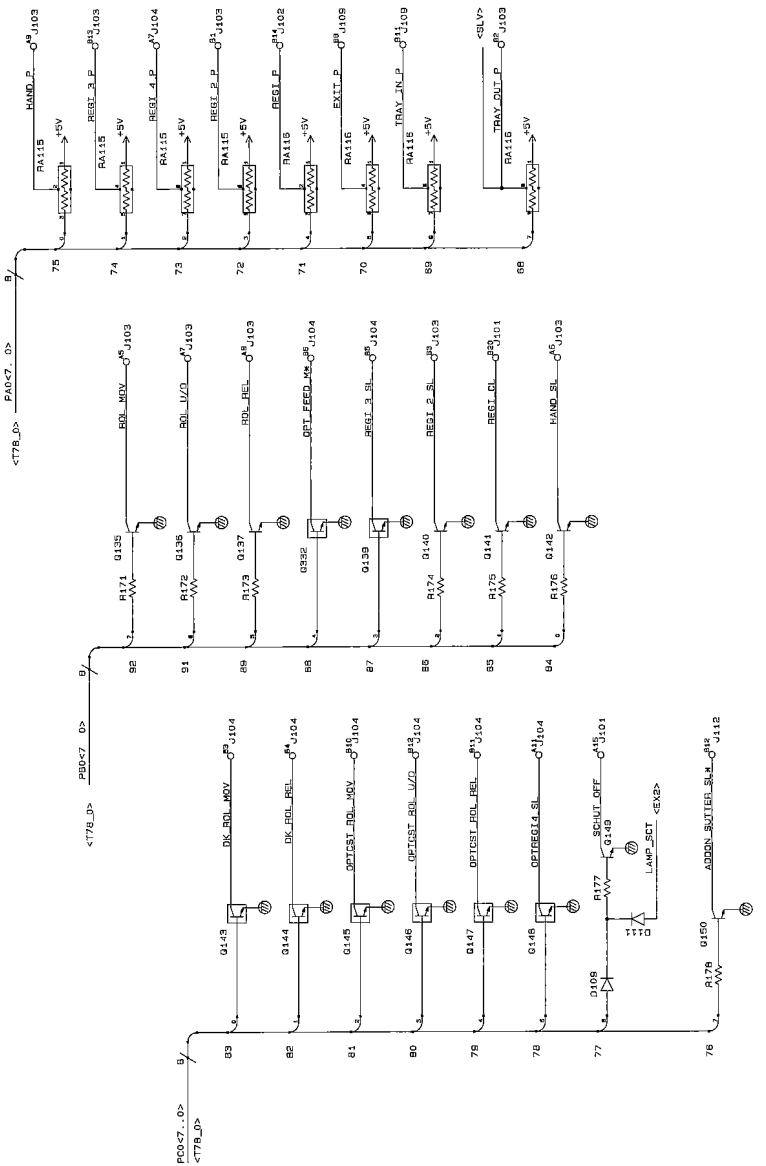
DC controller (NP-4835i) 11/19 (EX0)



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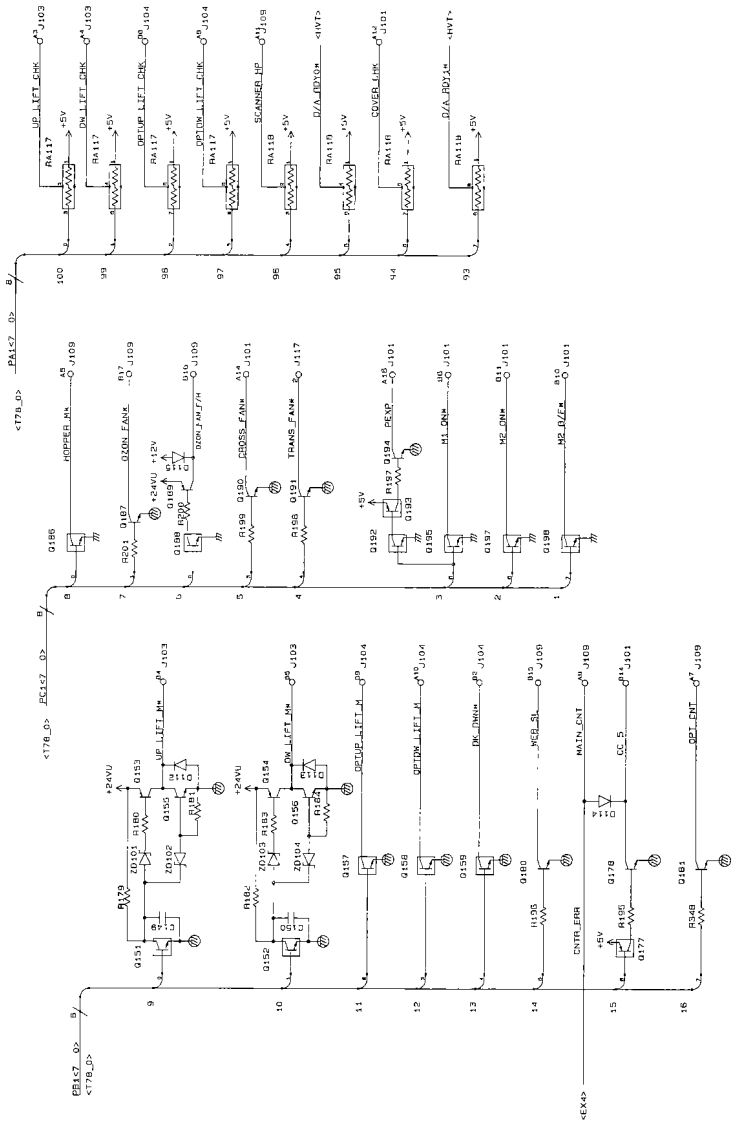
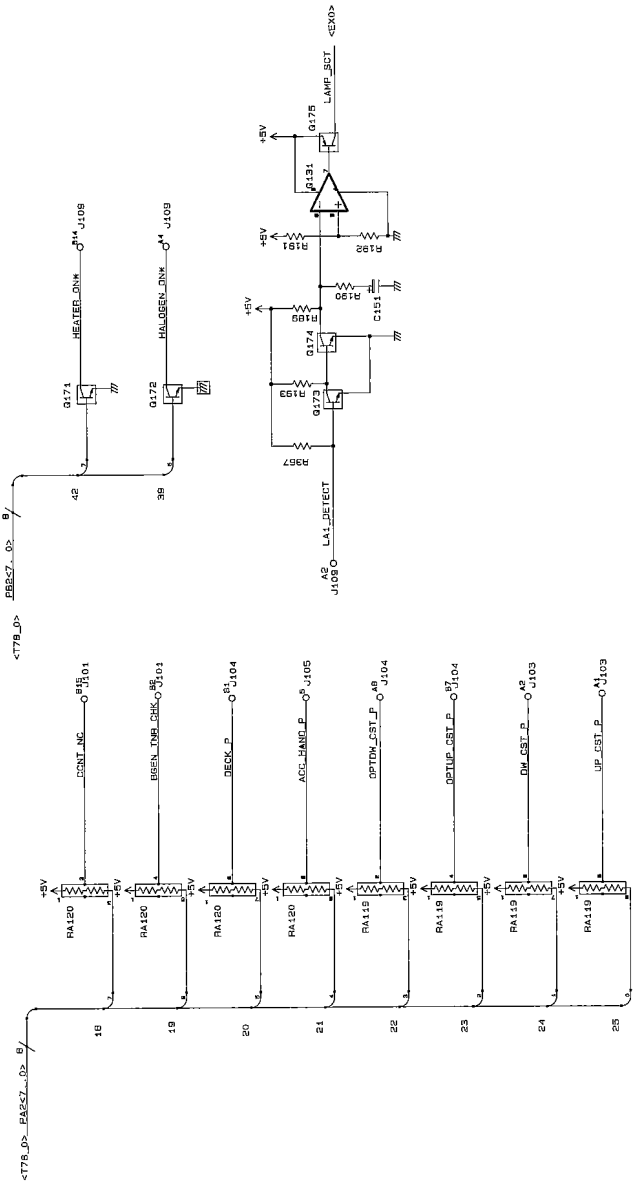
DC controller (NP-4835i) 12/19 (EX1)



DC controller (NP-4835i) 13/19 (EX2)



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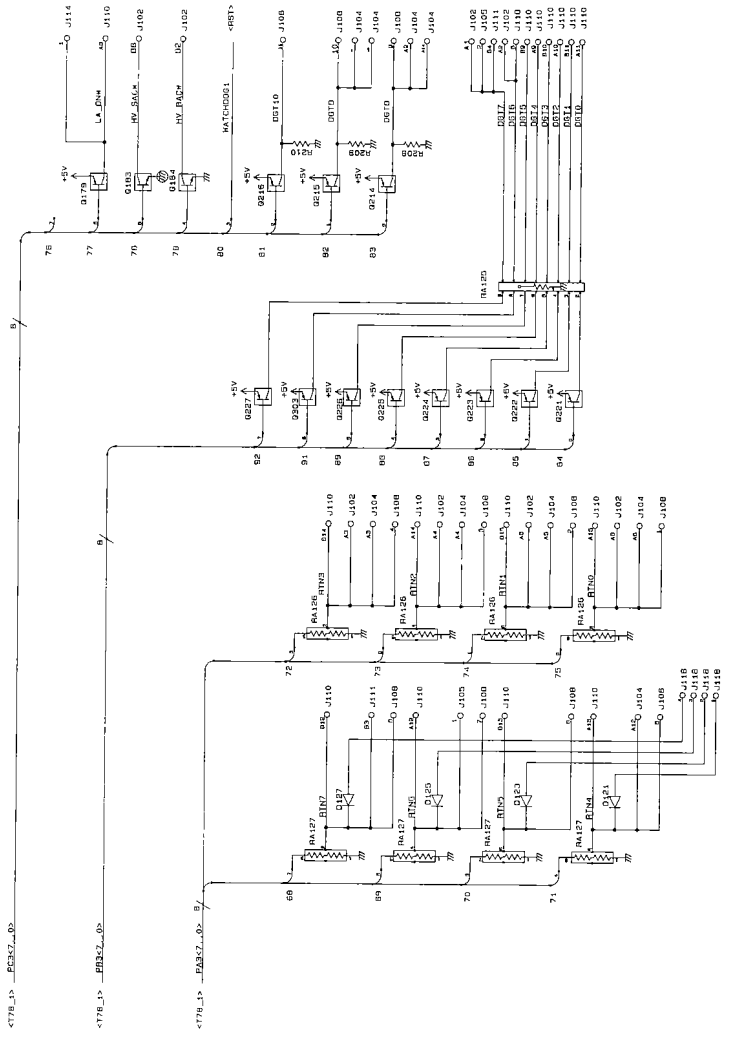
DC controller (NP-4835i) 14/19 (EX3)



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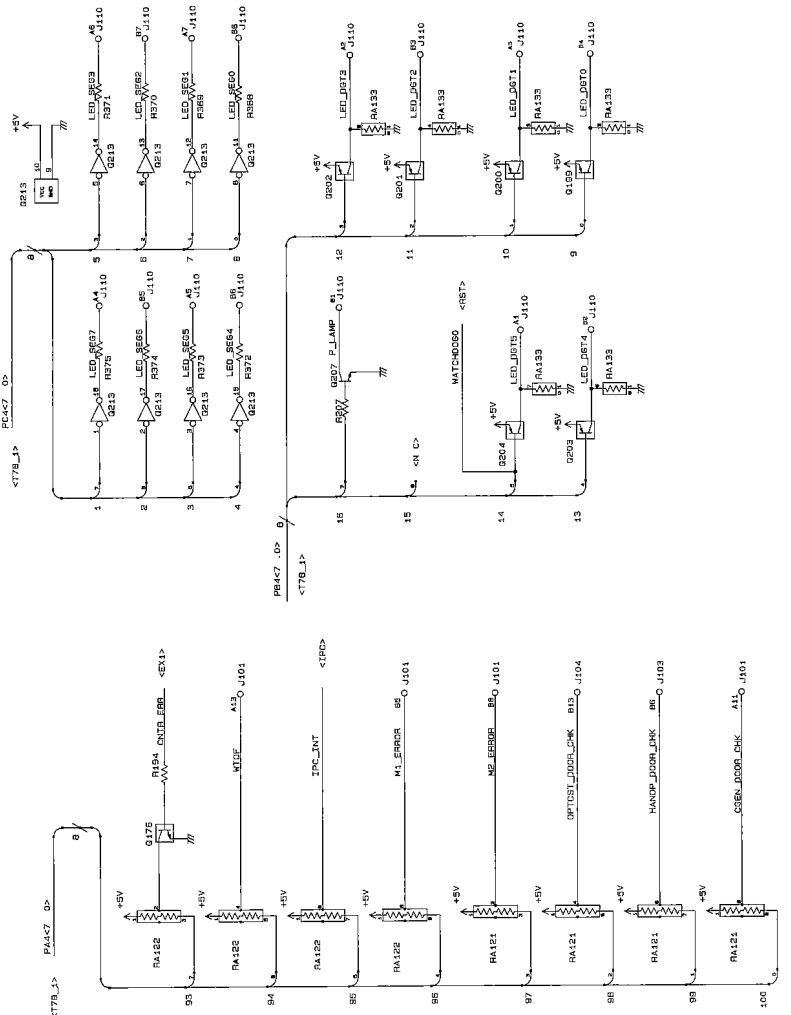
DC controller (NP-4835i) 15/19 (EX4)



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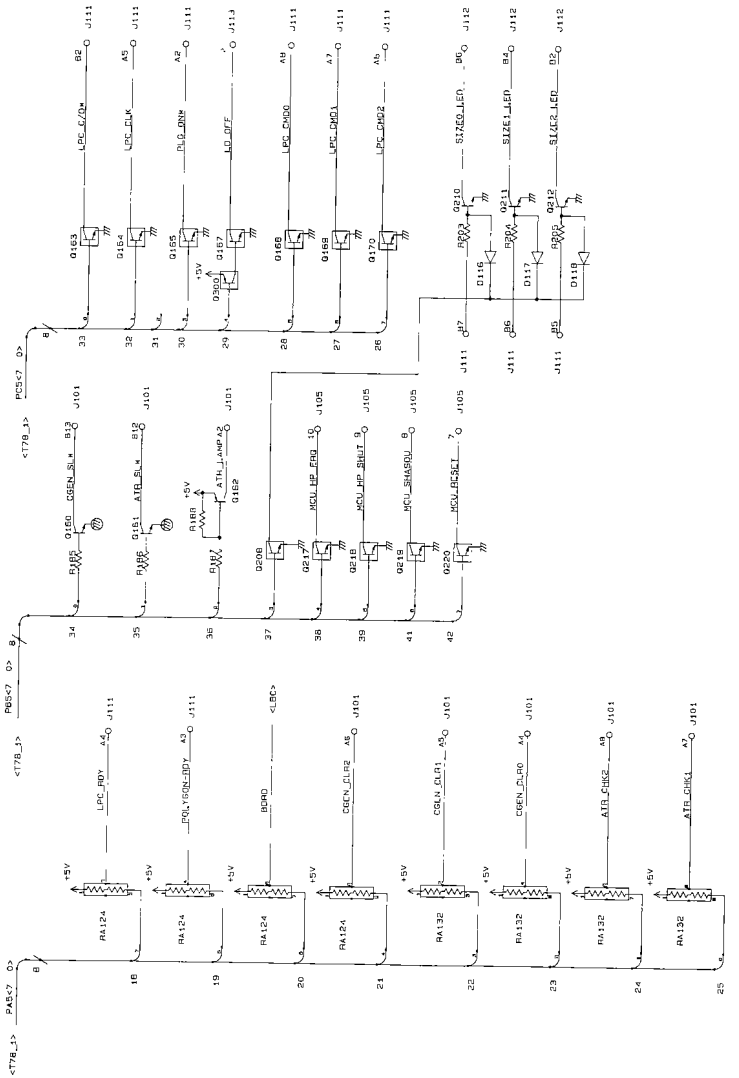
DC controller (NP-4835i) 16/19 (EX5)



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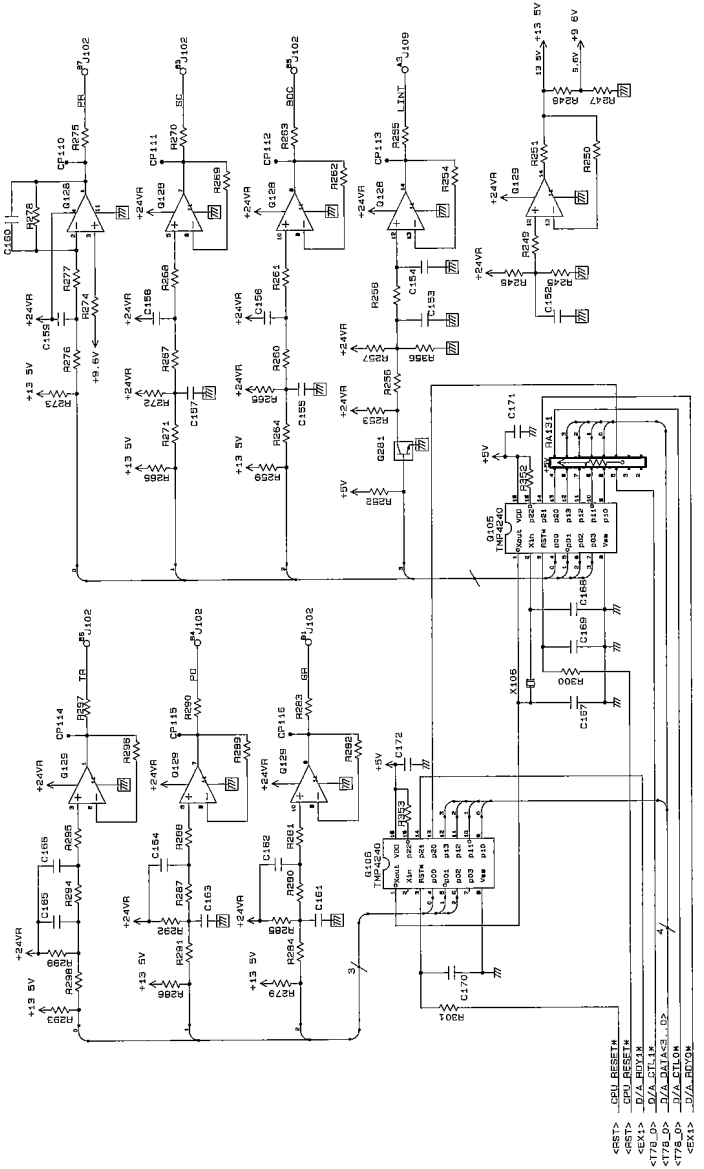
DC controller (NP-4835i) 17/19 (HVT: Analog signals for high voltage)



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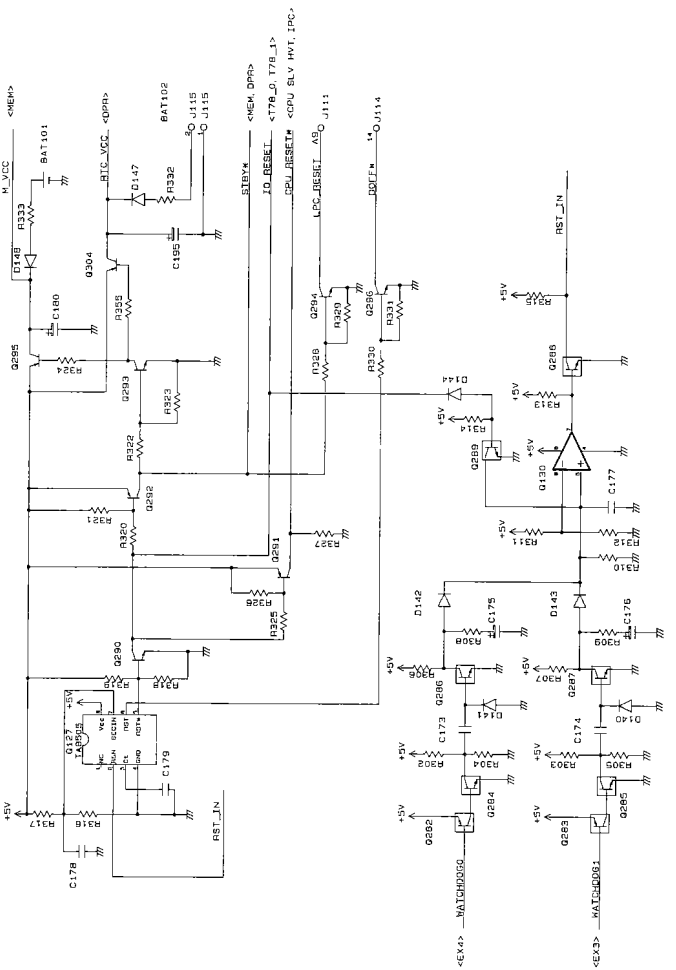
DC controller (NP-4835i) 18/19 (RST: Reset circuit)



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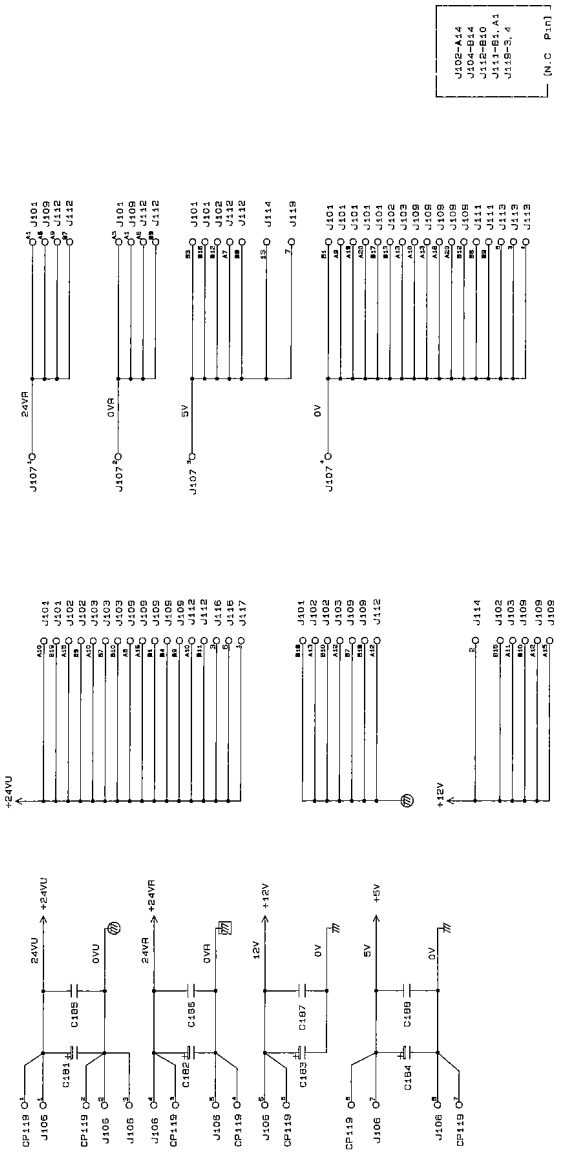
DC controller (NP-4835i) 19/19 (POWER: DC power)



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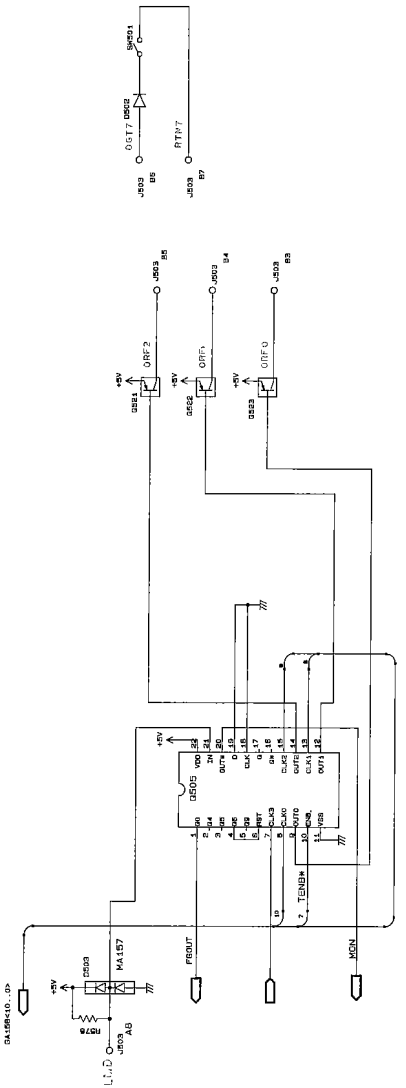
5. LASER POWER CONTROLLER (NP-4835/4835i only)

Laser power controller (1/2)



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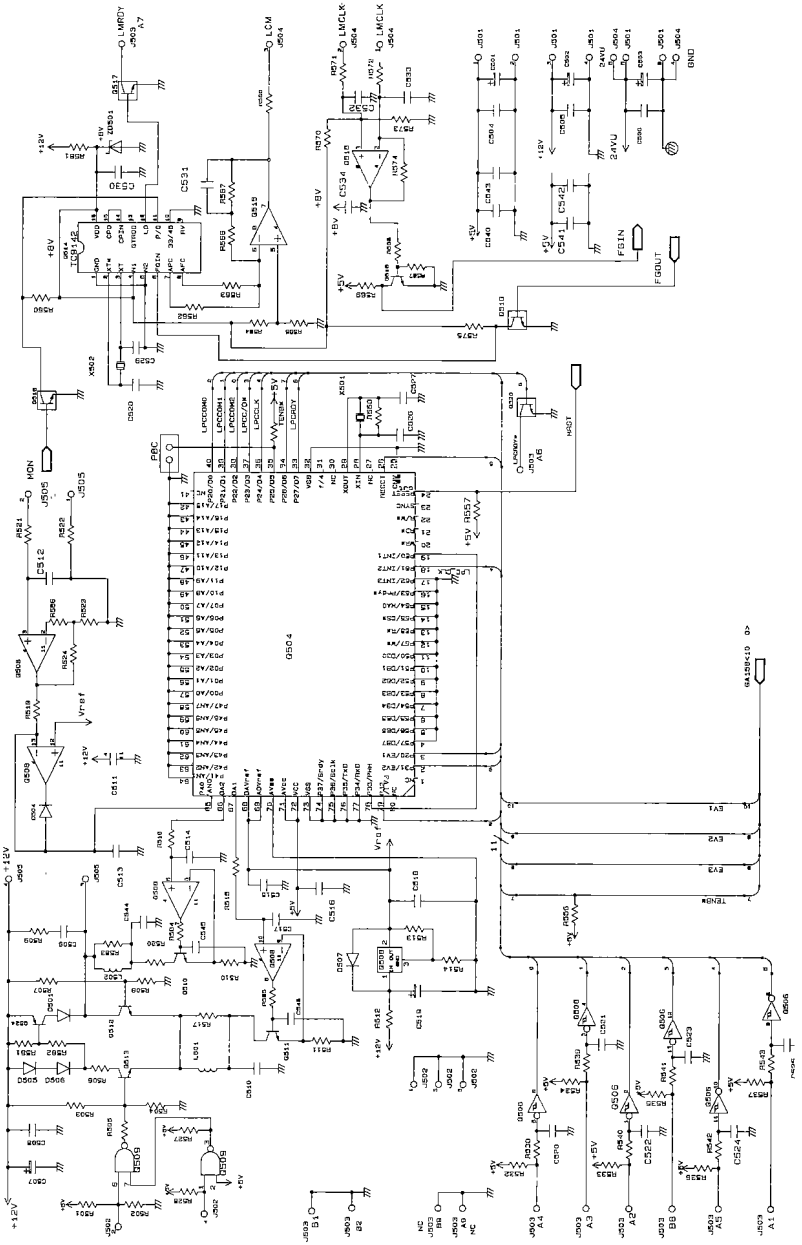
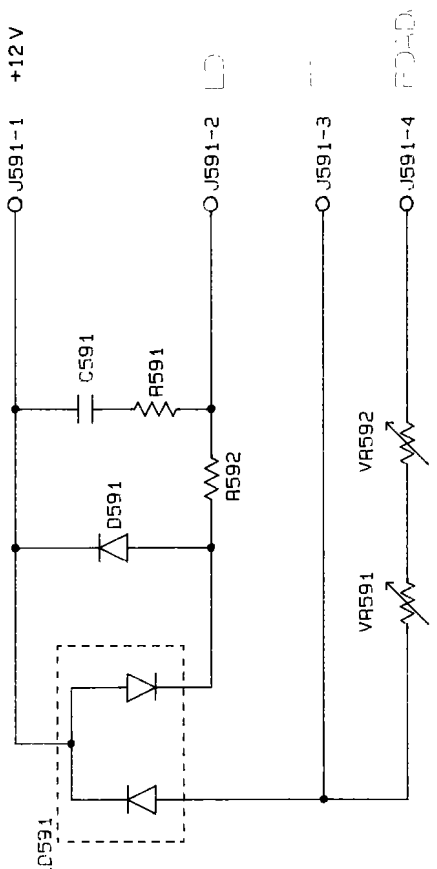
Laser power controller (2/2)



6. LASER UNIT (NP-4835/4835i only)



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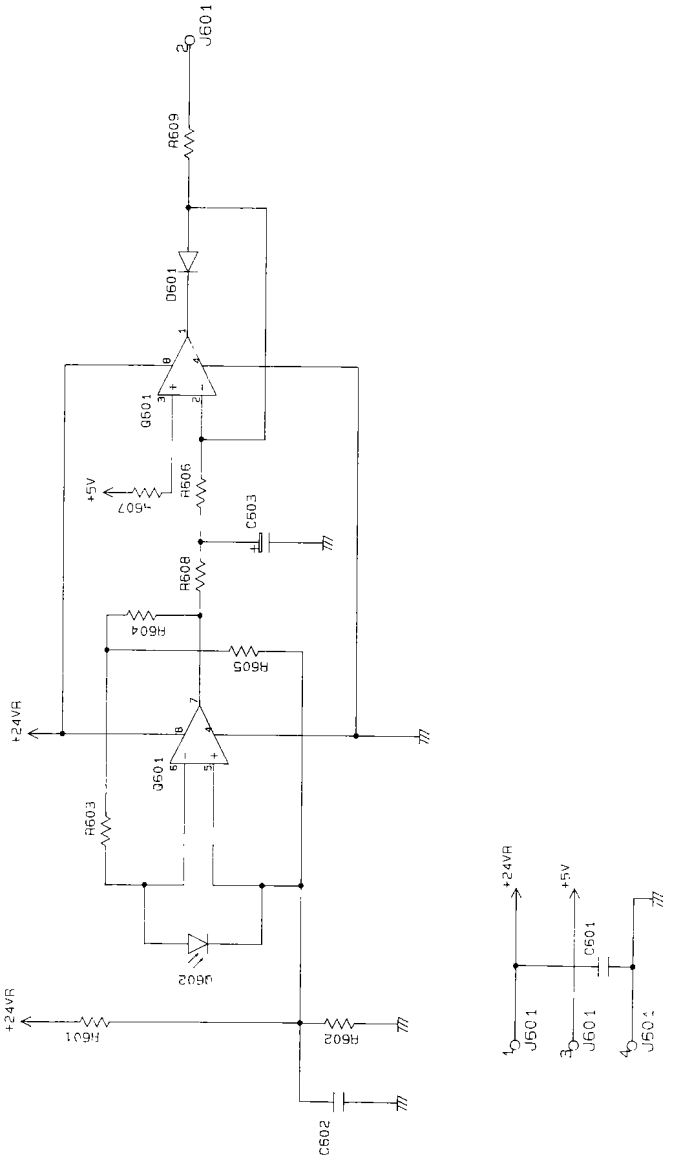
7. AE SENSOR


J601
R609
D601
Q601
+5V
R607
R606
C603
R608
R604
R605
+24VR
Q601
R603
D602
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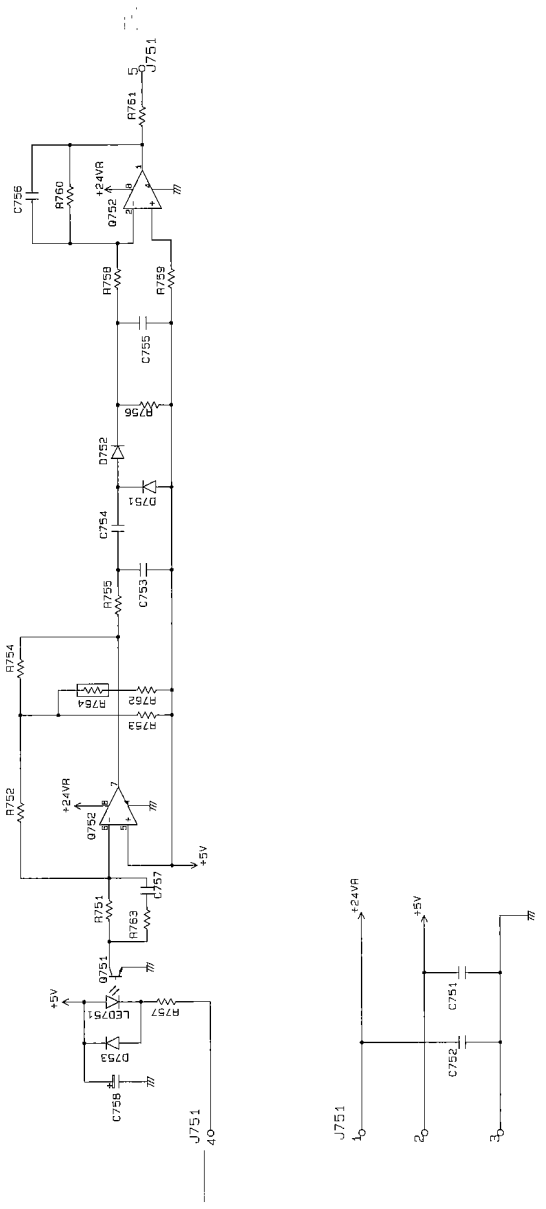
R601
R602
C602
+24VR
+5V
C601
J601
J601
J601

8. DOCUMENT SIZE DETECTION 1



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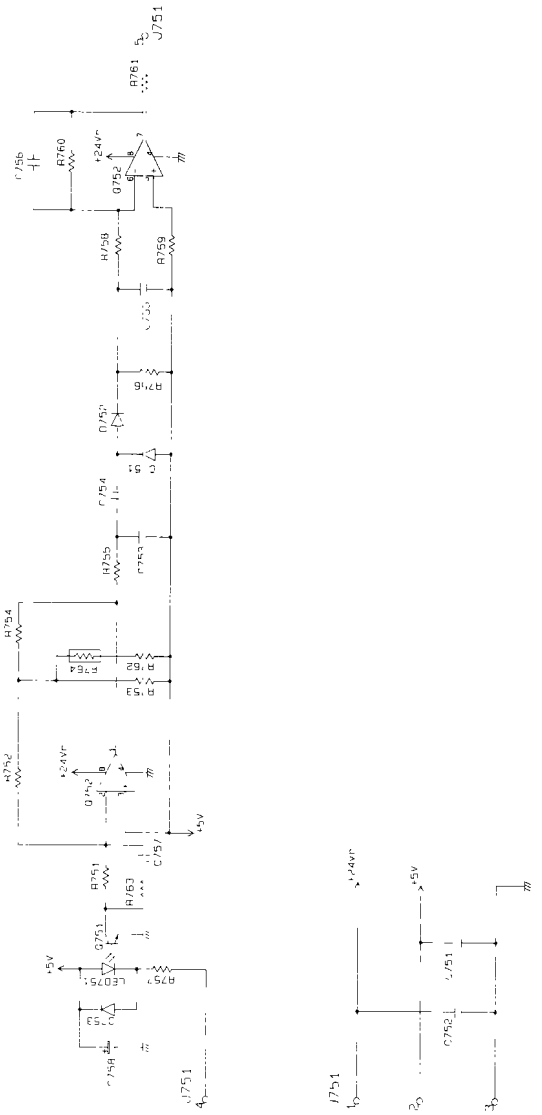
9. DOCUMENT SIZE DETECTION 2



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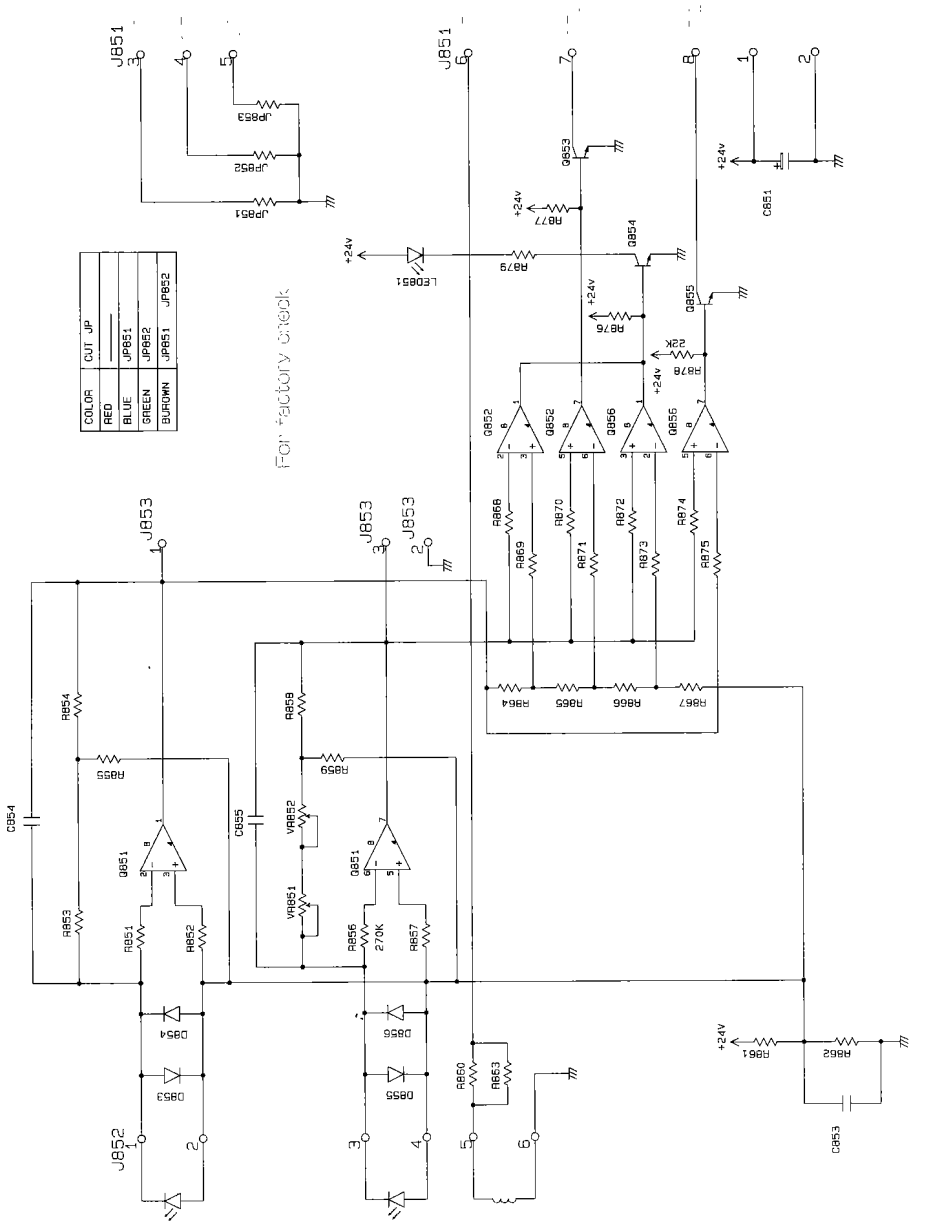
10. COLOR TONER CONCENTRATION DETECTION (NP-4835/4835i only)



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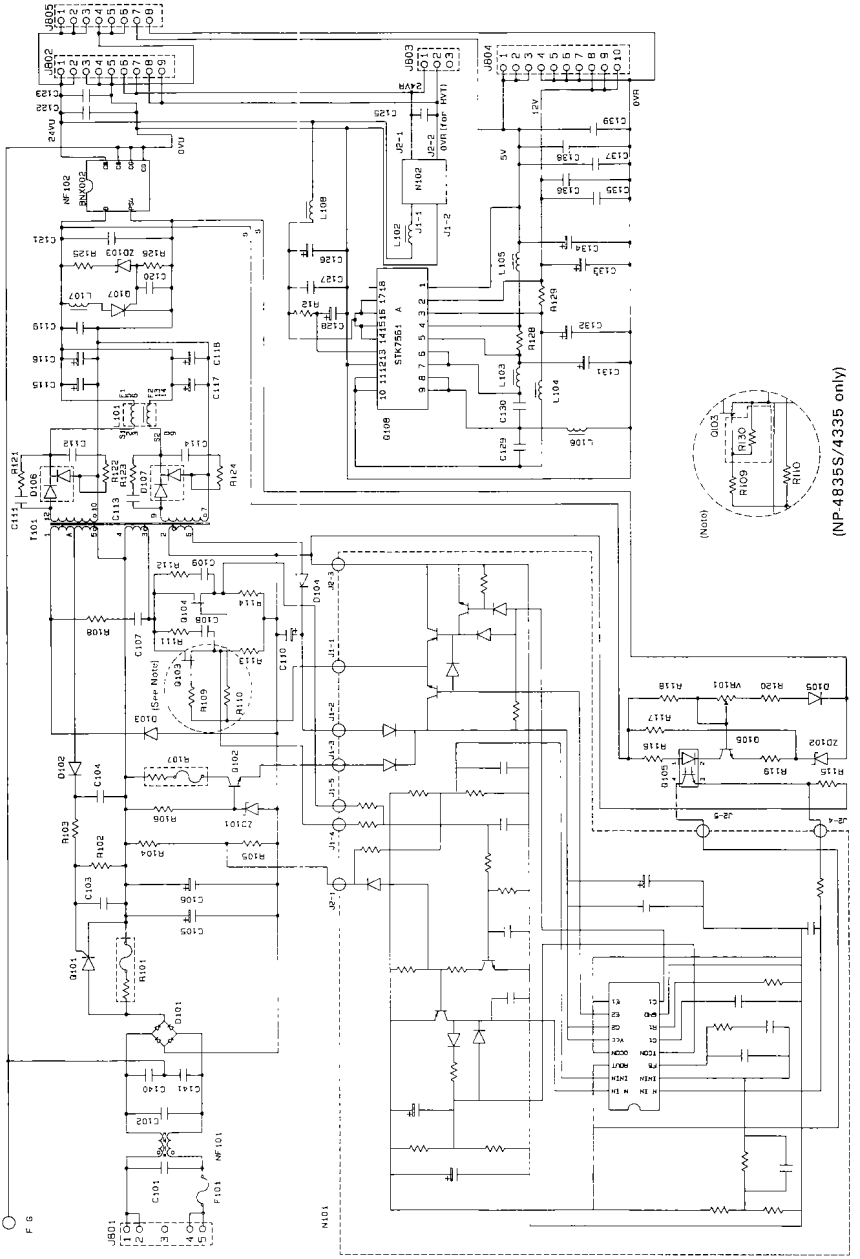
11. DC POWER SUPPLY

DC power supply (100/115V)



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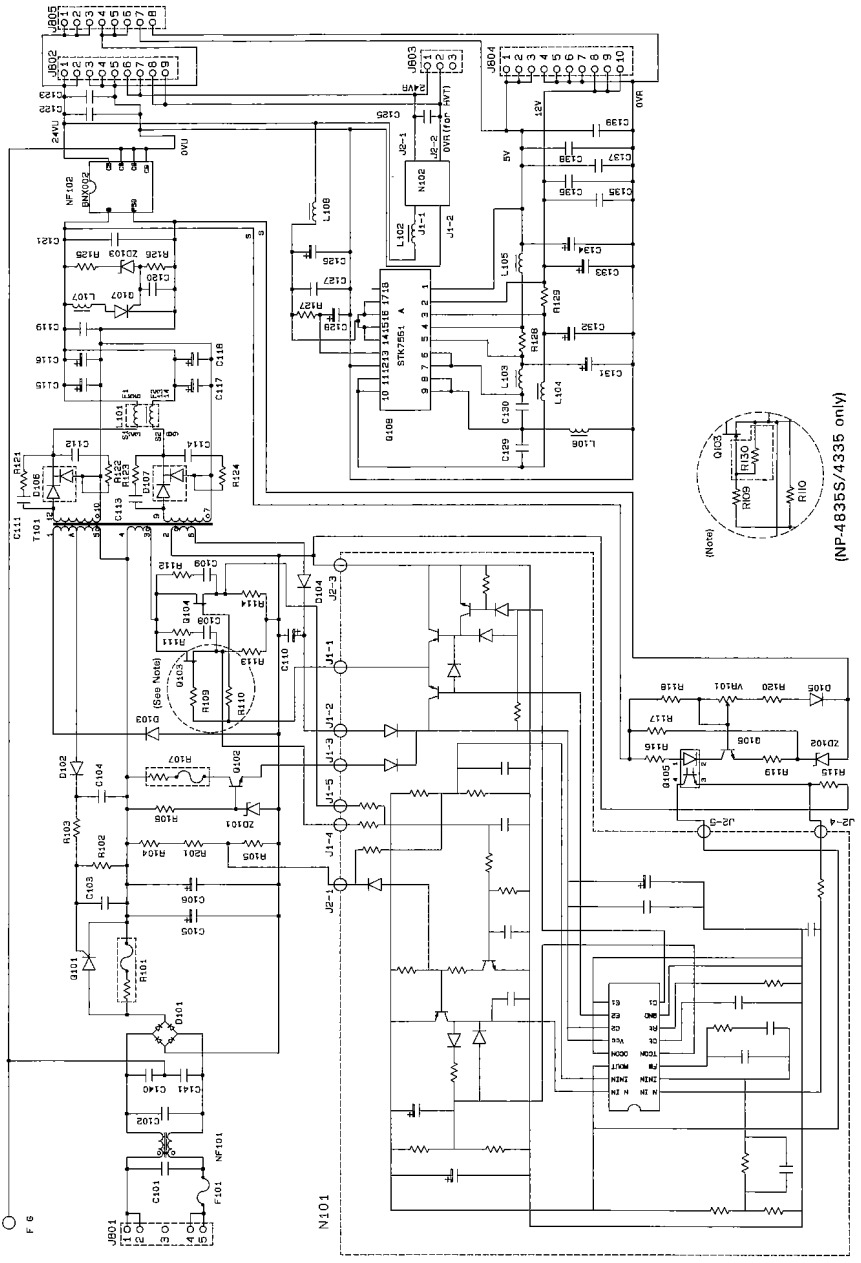
DC power supply (220/240V)



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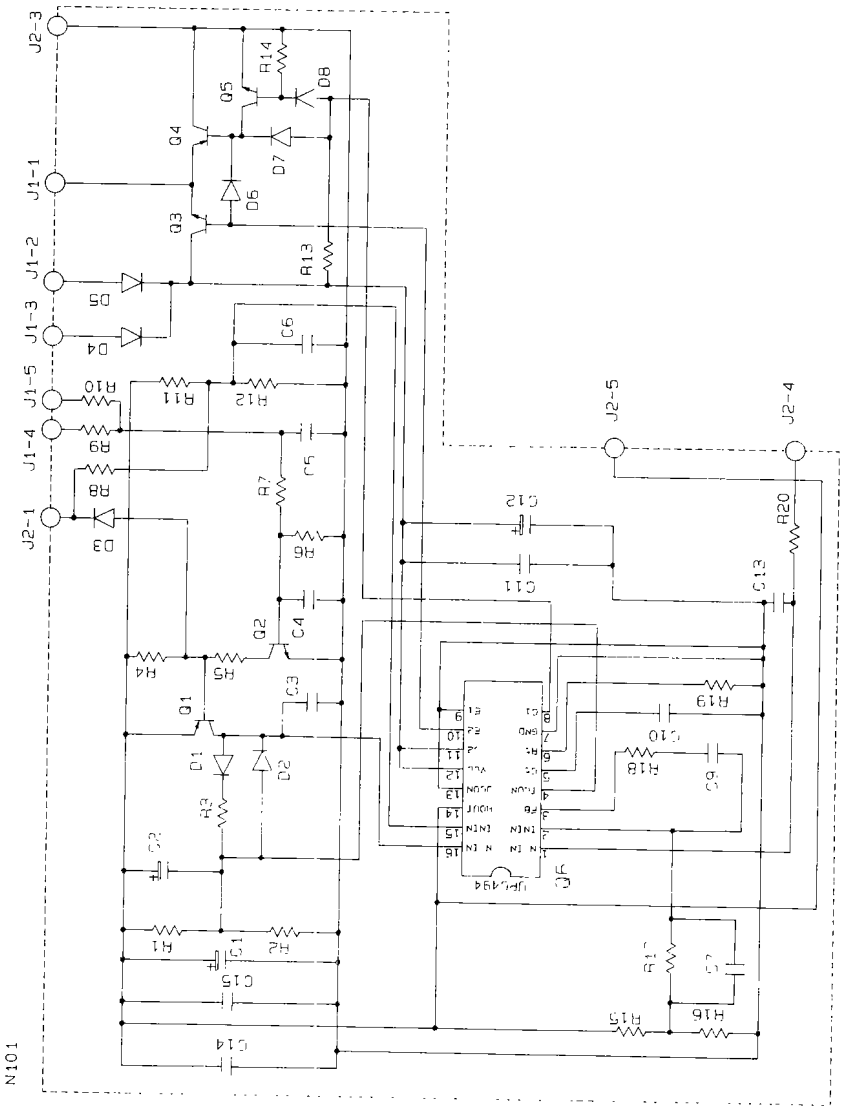
12. CONTROL CIRCUIT (DC POWER SUPPLY)



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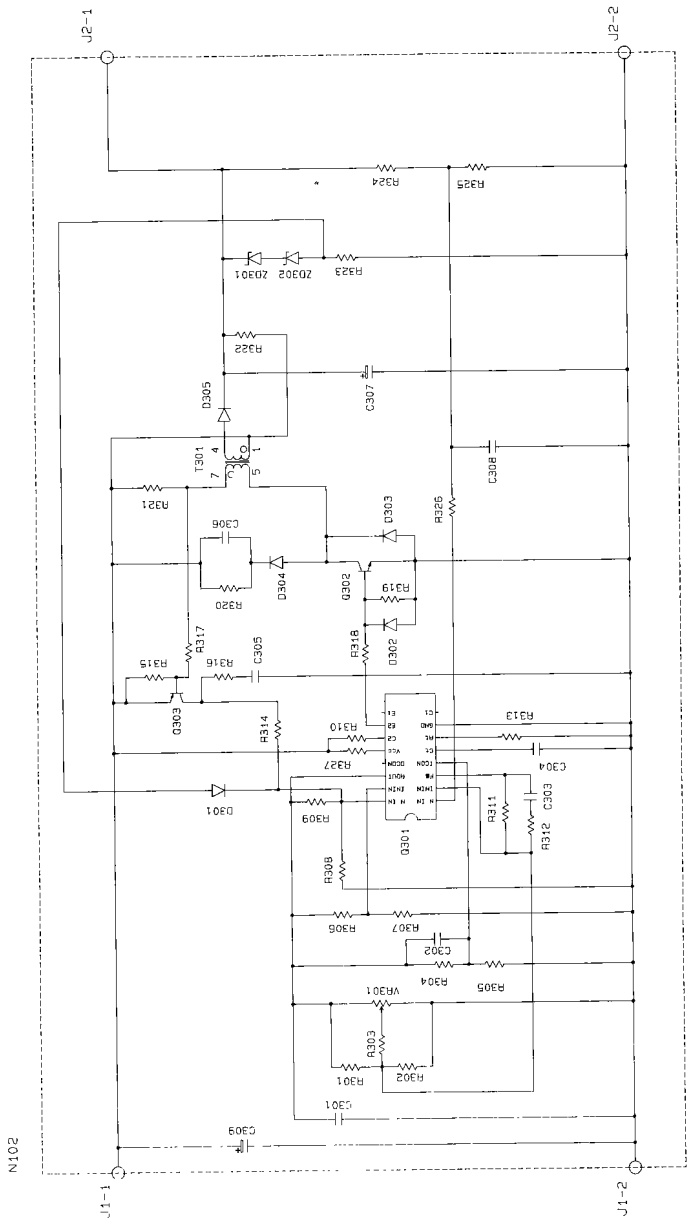
13. SUB CIRCUIT (DC POWER SUPPLY)



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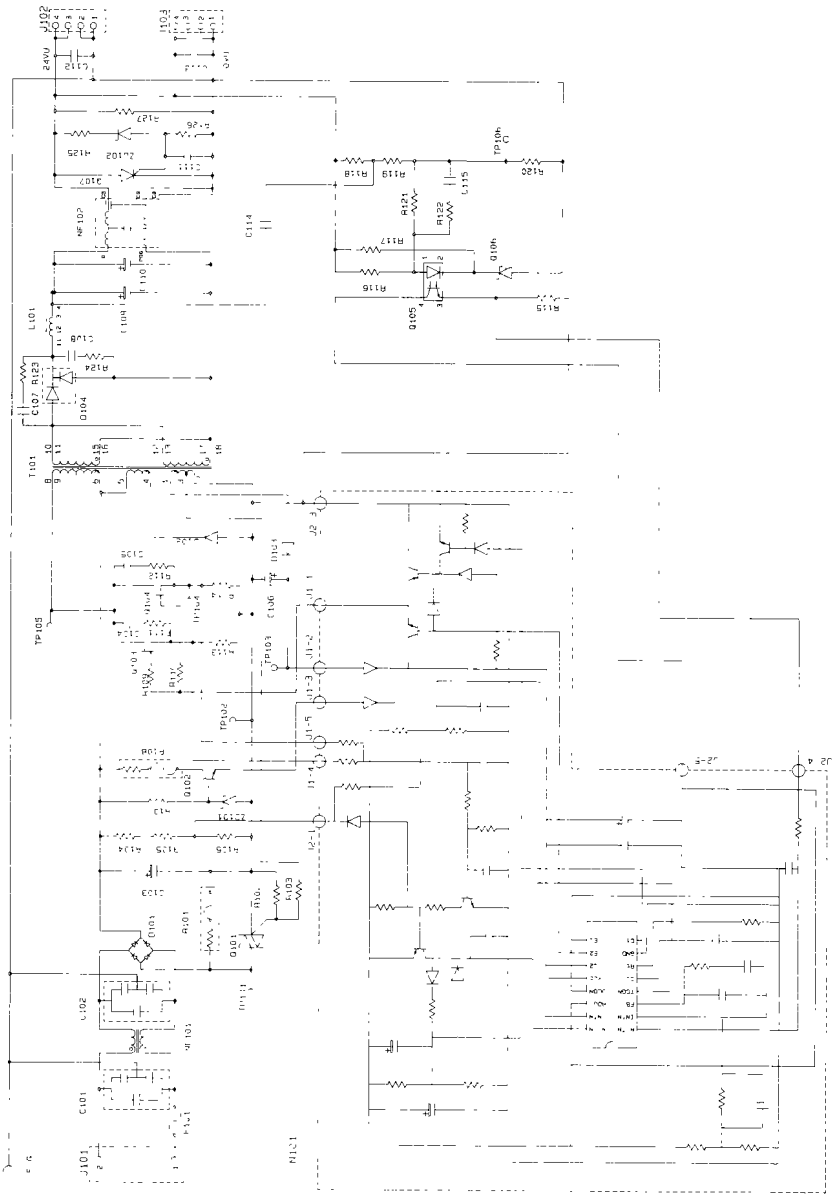
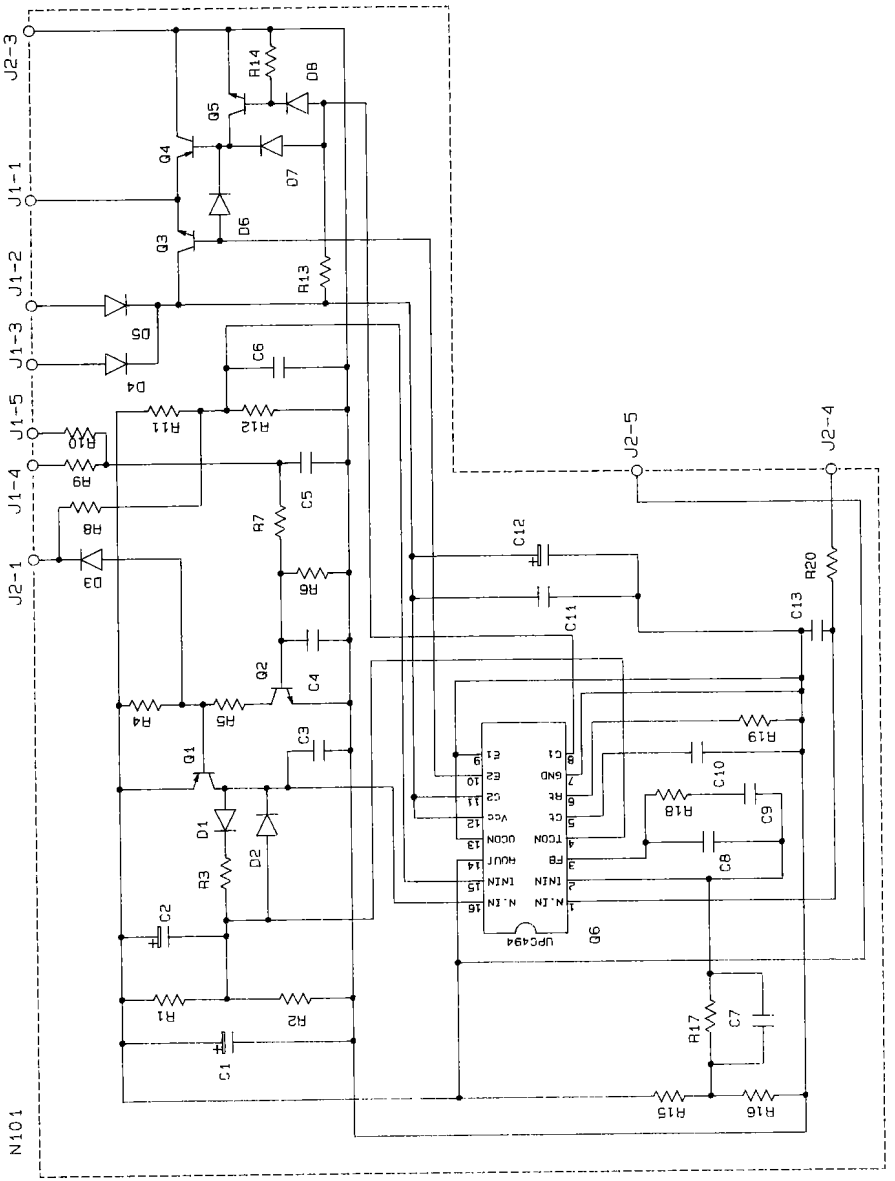
14. DC POWER SUPPLY (DF/SORTER)



15. CONTROL CIRCUIT (DC POWER SUPPLY FOR DF/SORTER)



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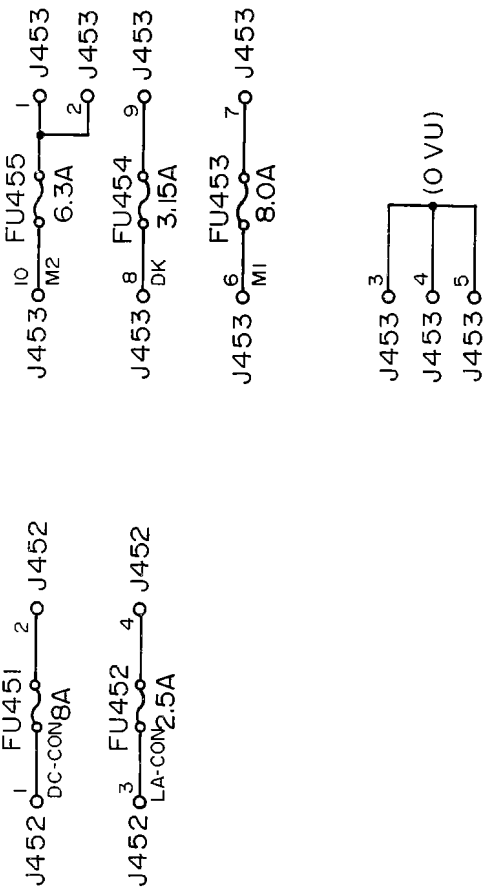
16. SUB DC POWER SUPPLY (NP-4835 only)



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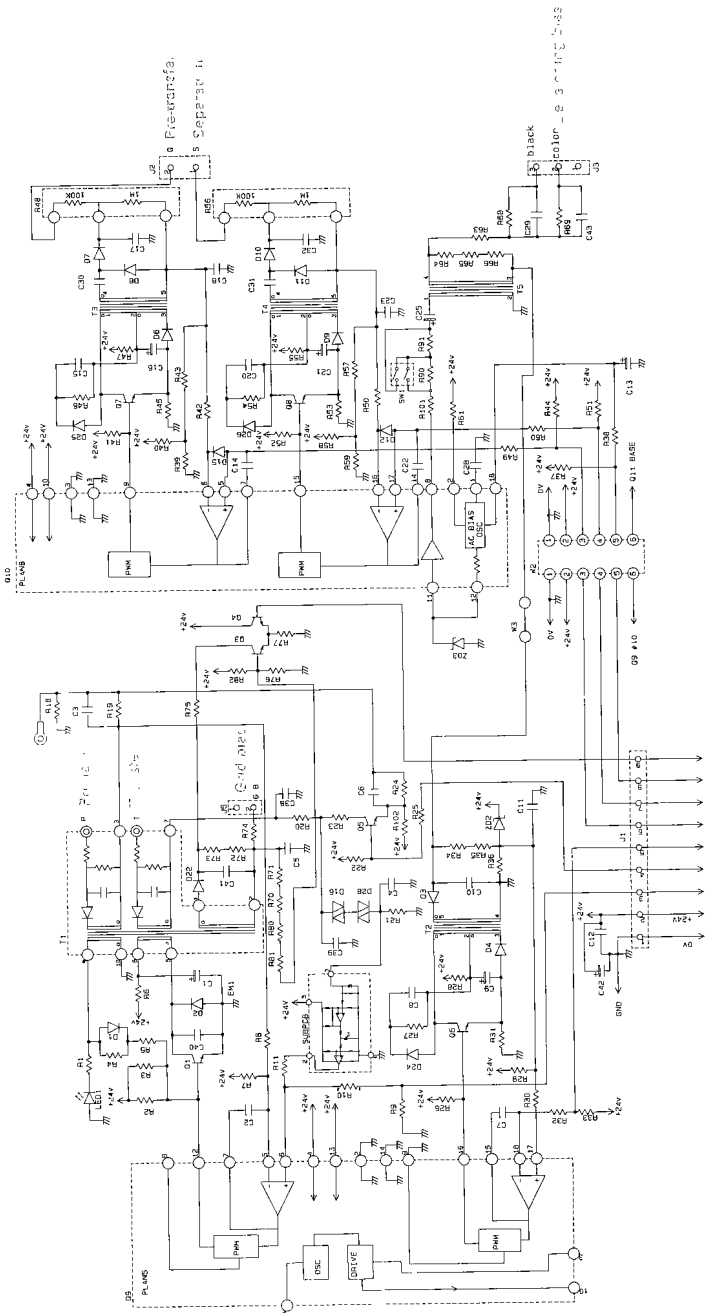
17. HVT



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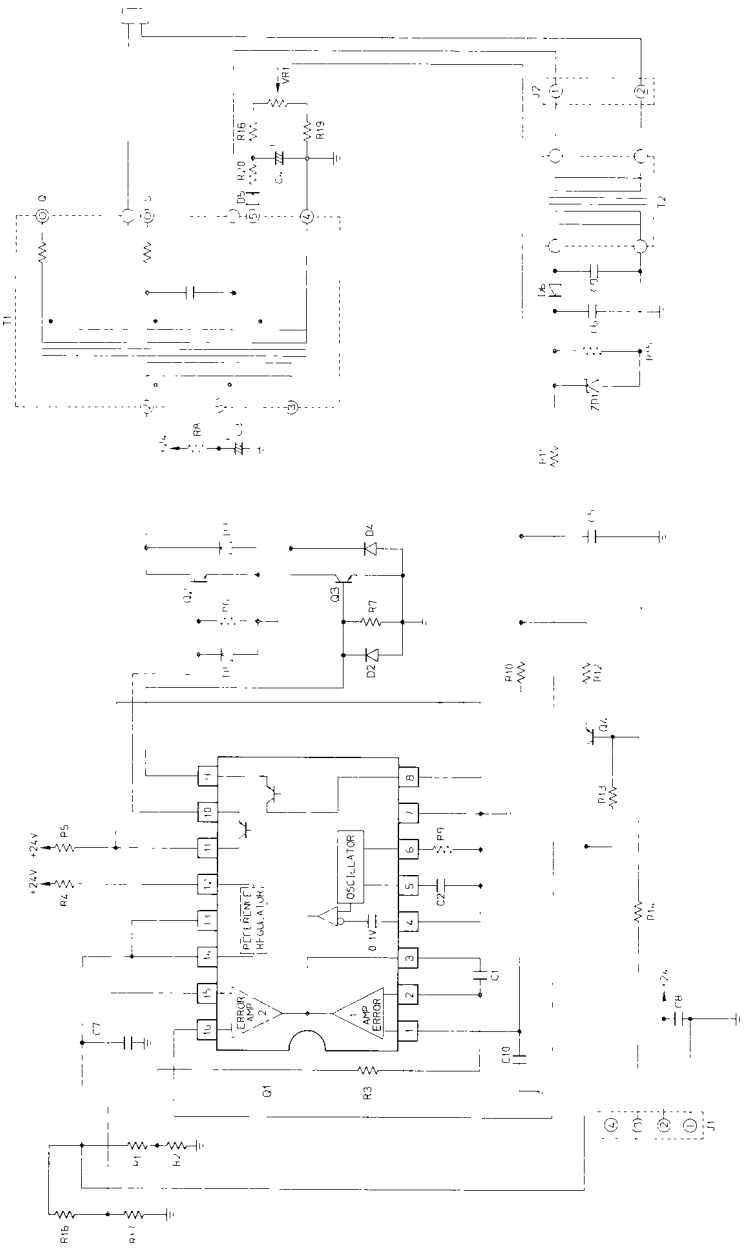
18. HVTAC



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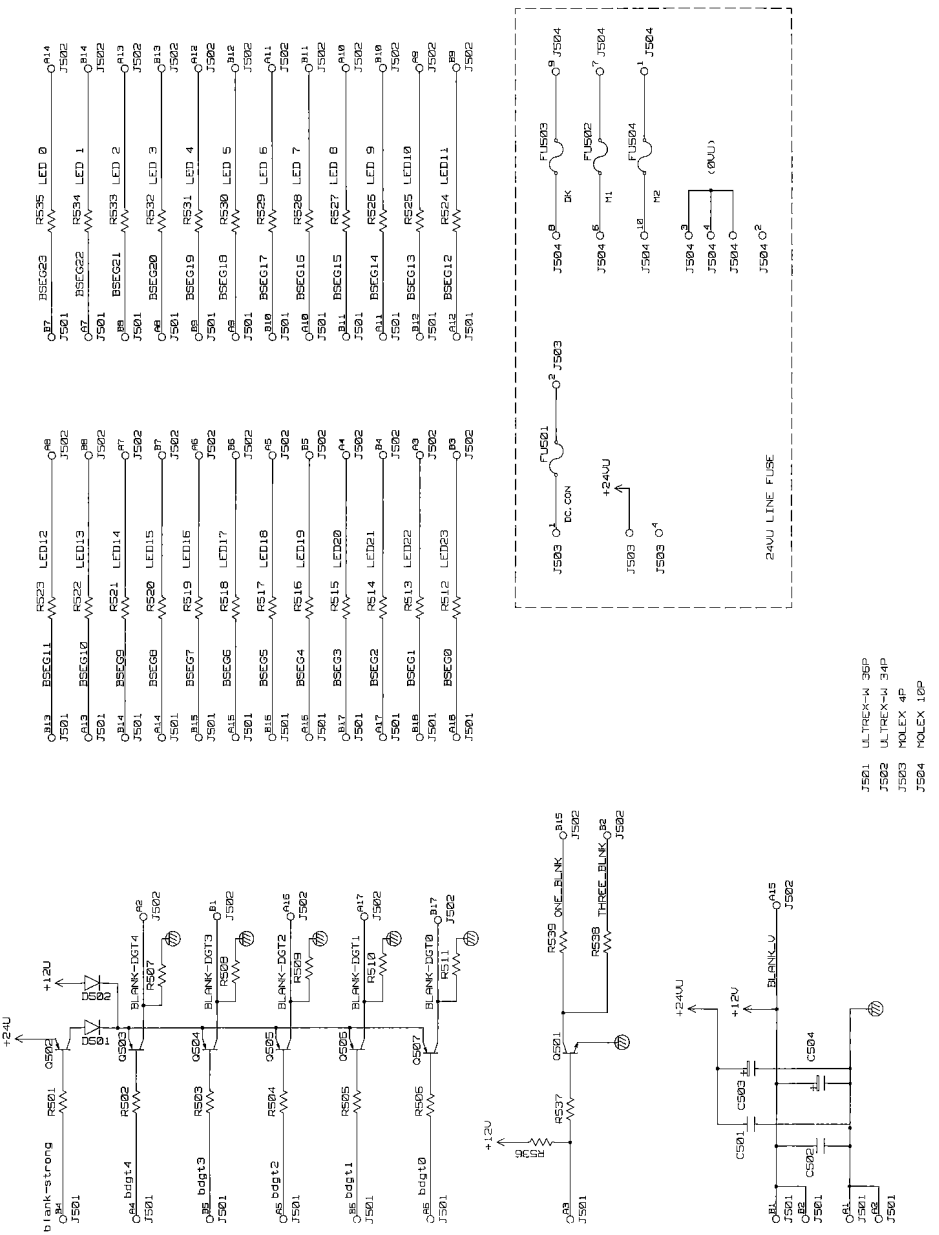
18A. LED DRIVER (NP-4835S/4335 only)



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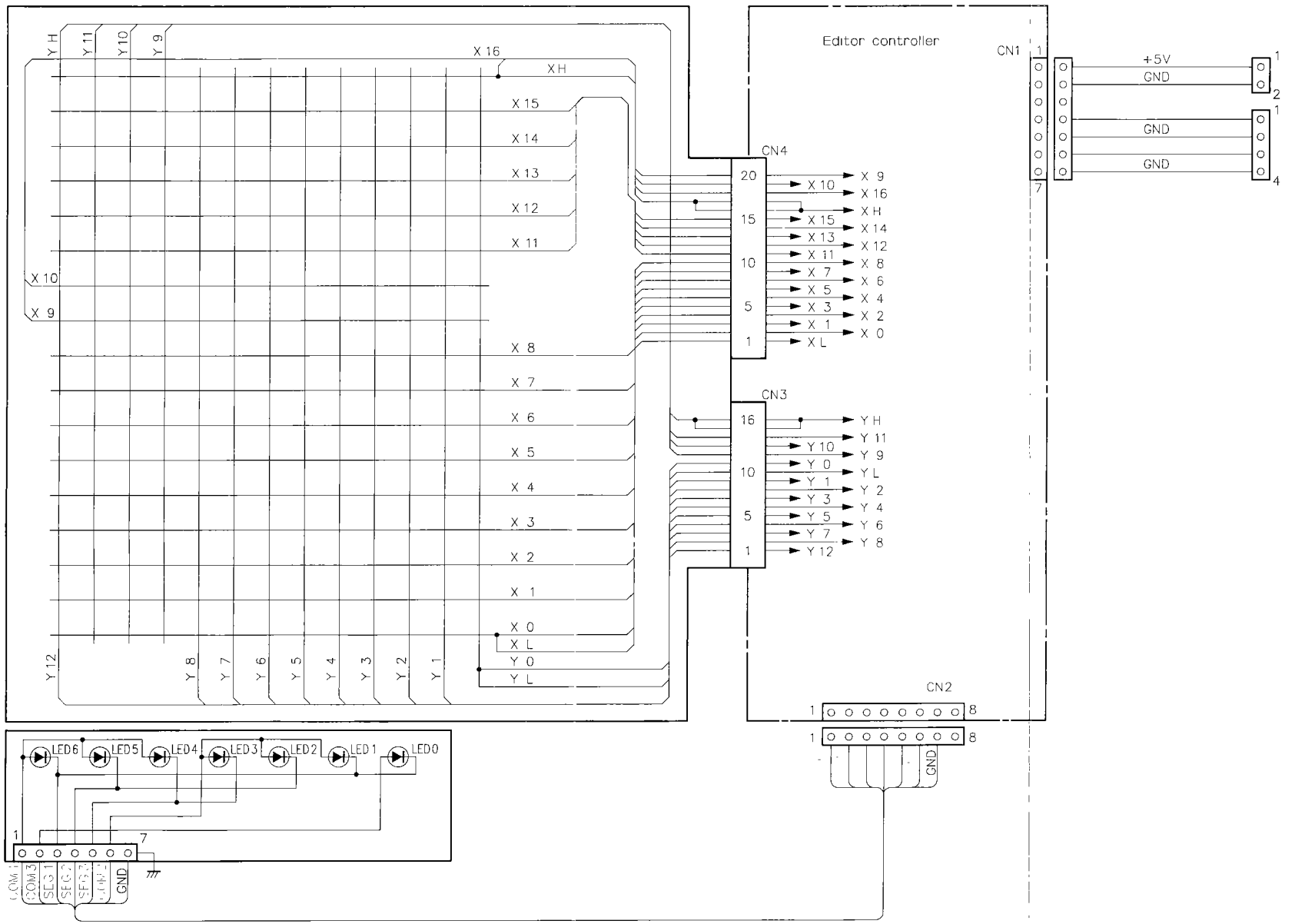

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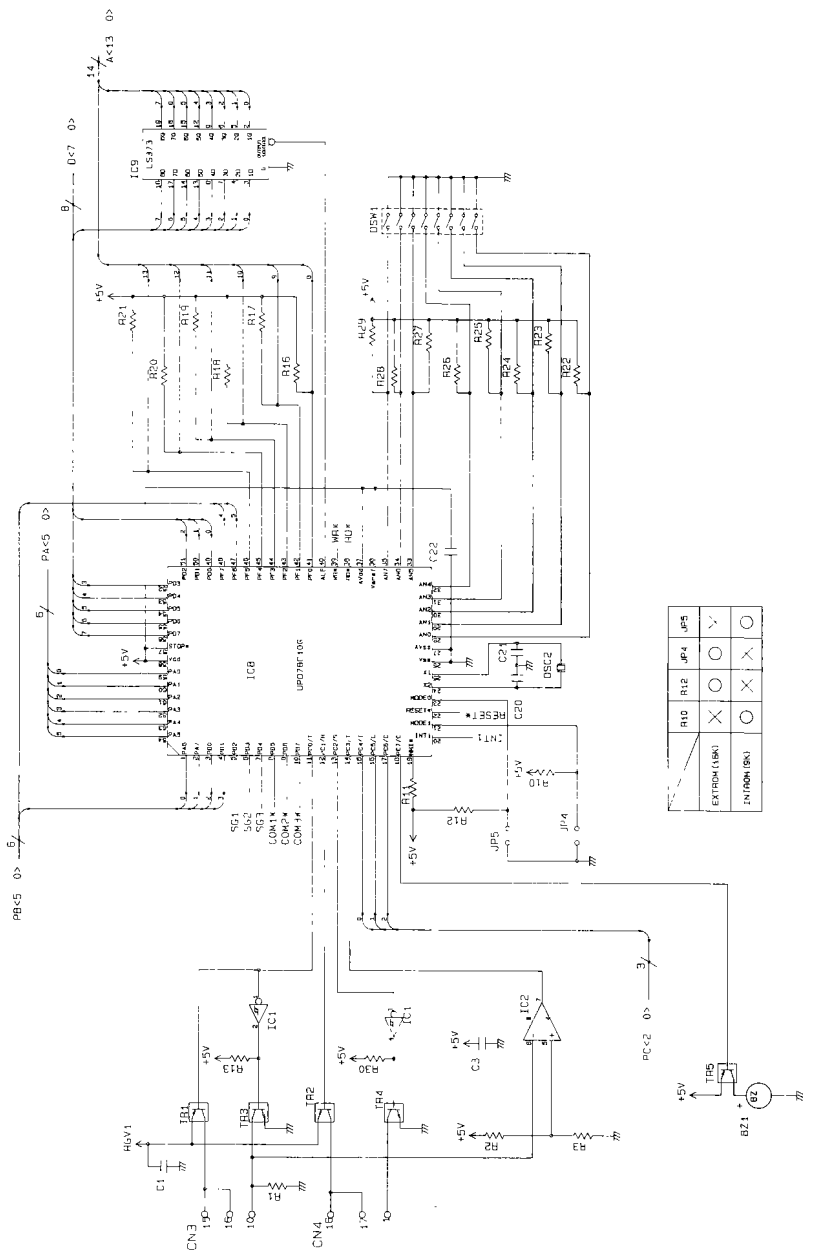
20. EDITOR CONTROLLER (NP-4835/4835i only)

Editor controller (1/3)



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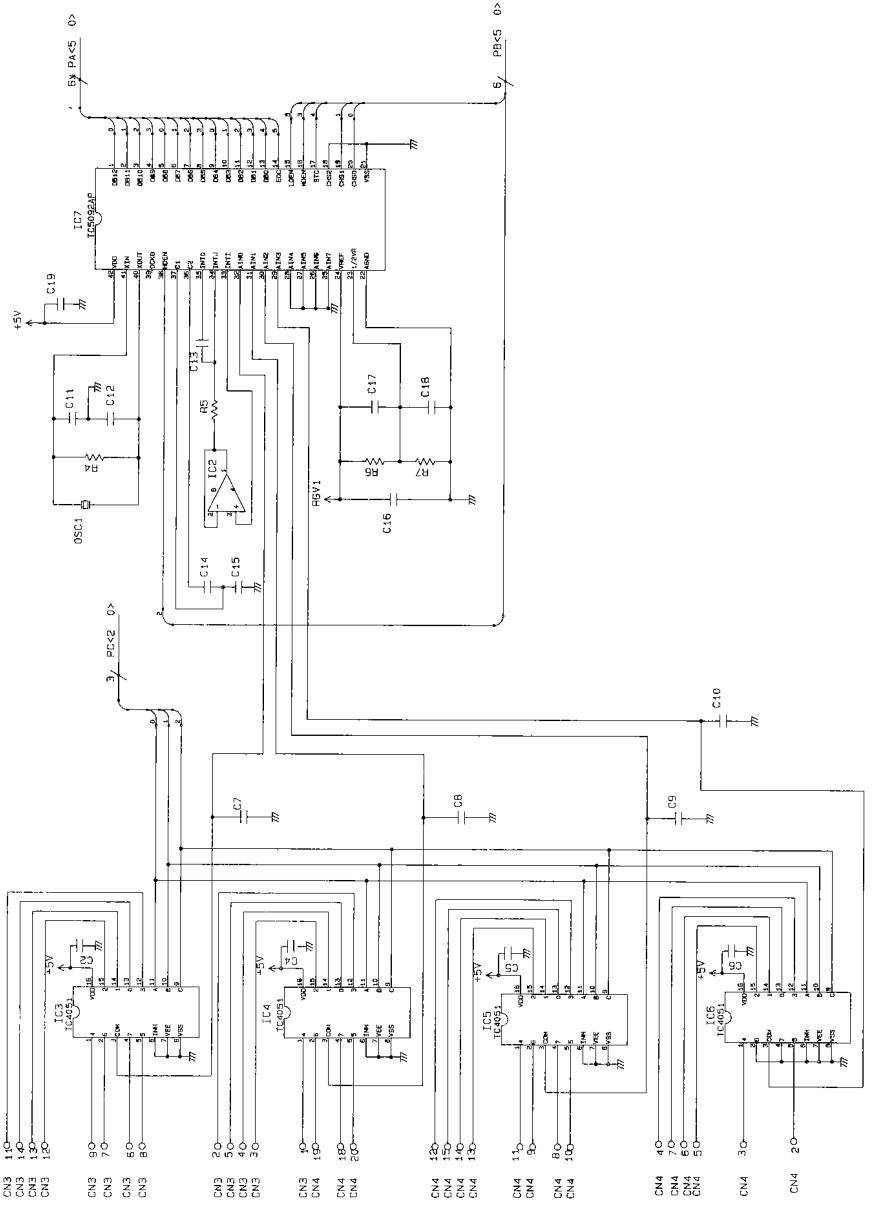
Editor controller (2/3)



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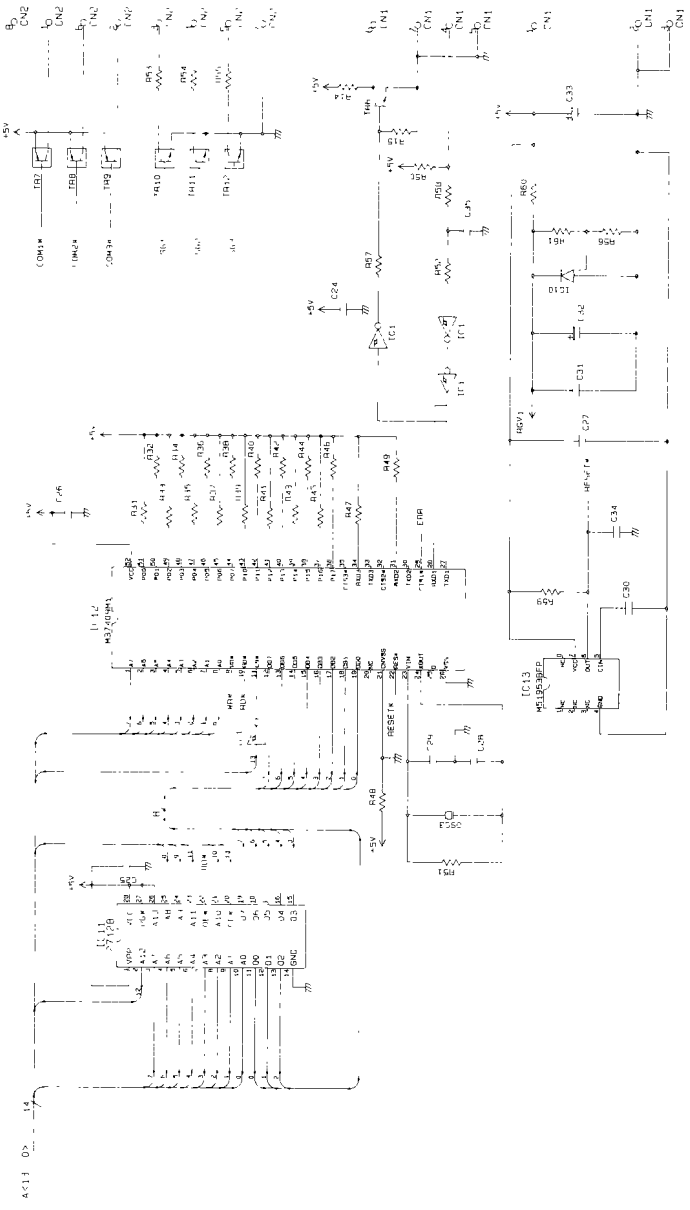
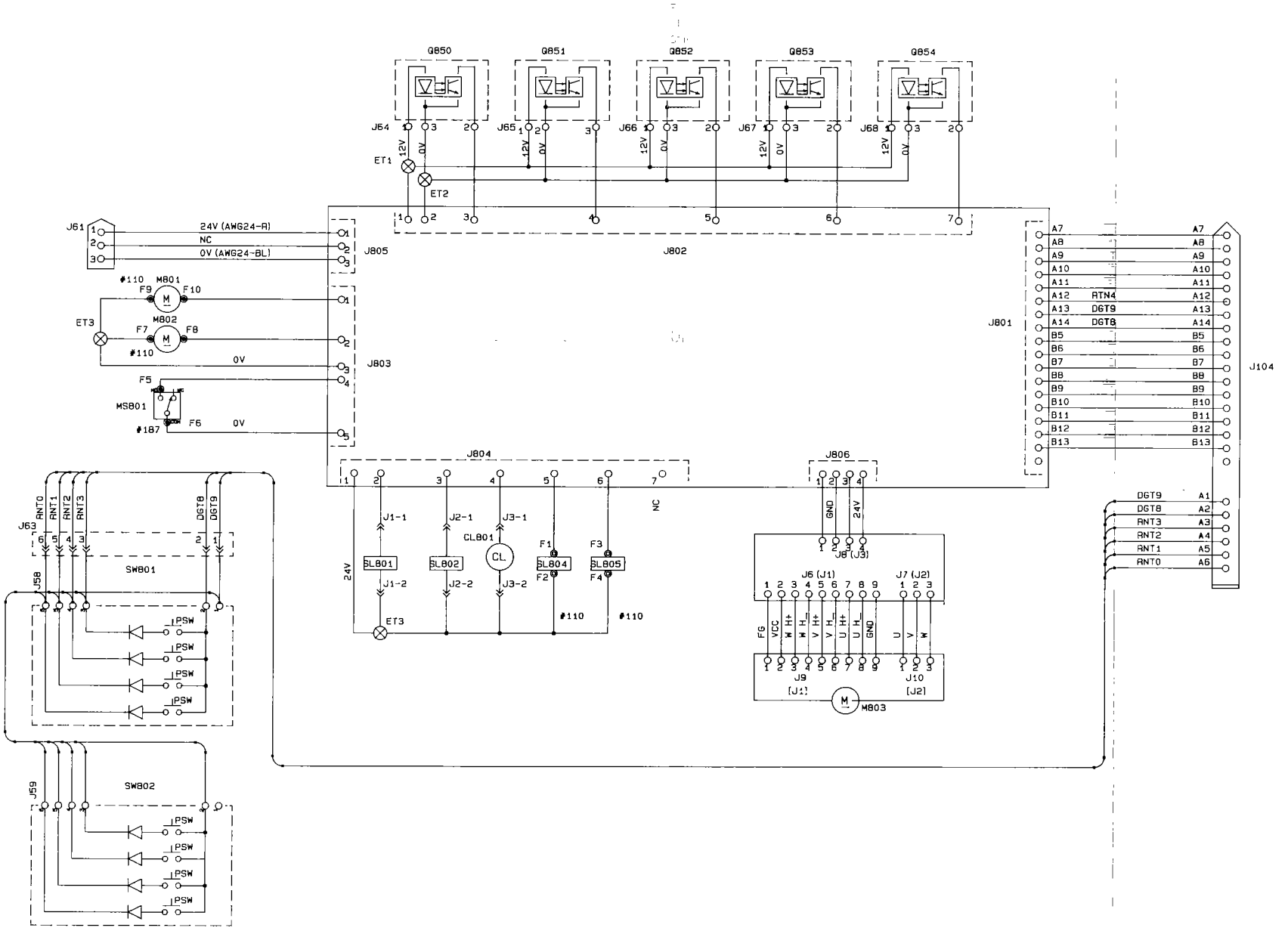
Editor controller (3/3)





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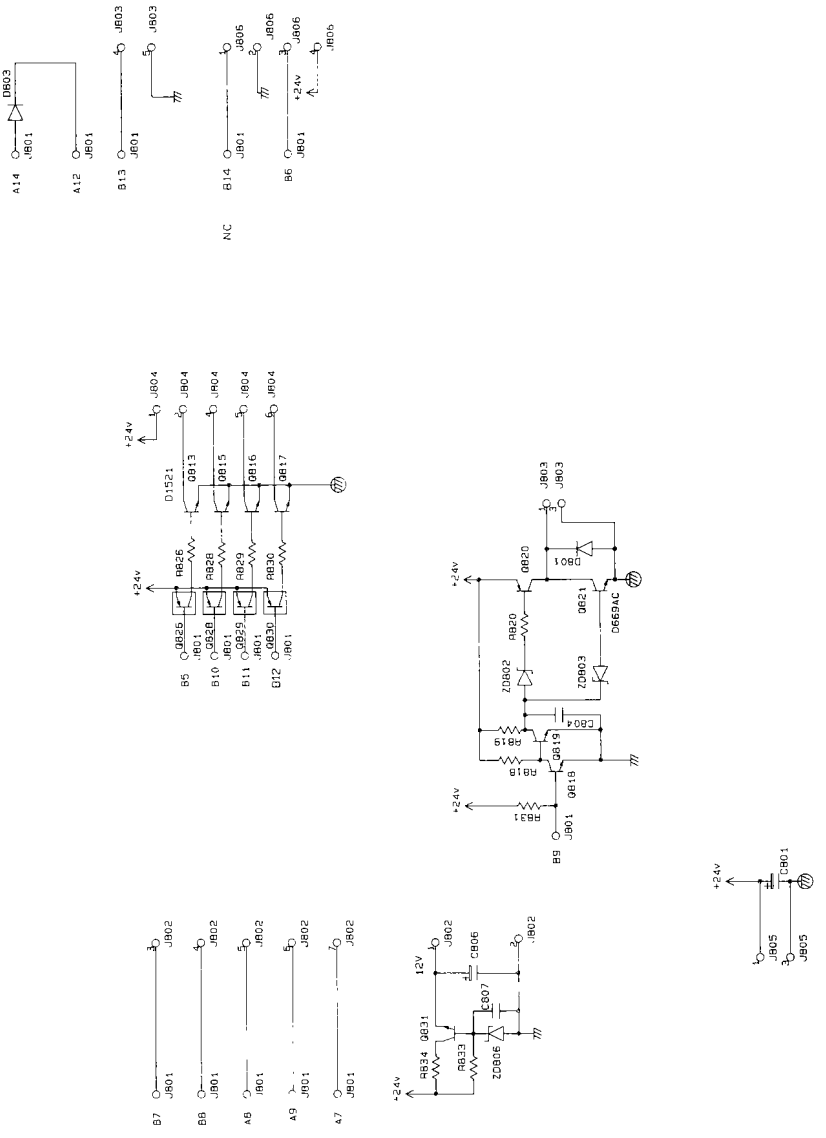
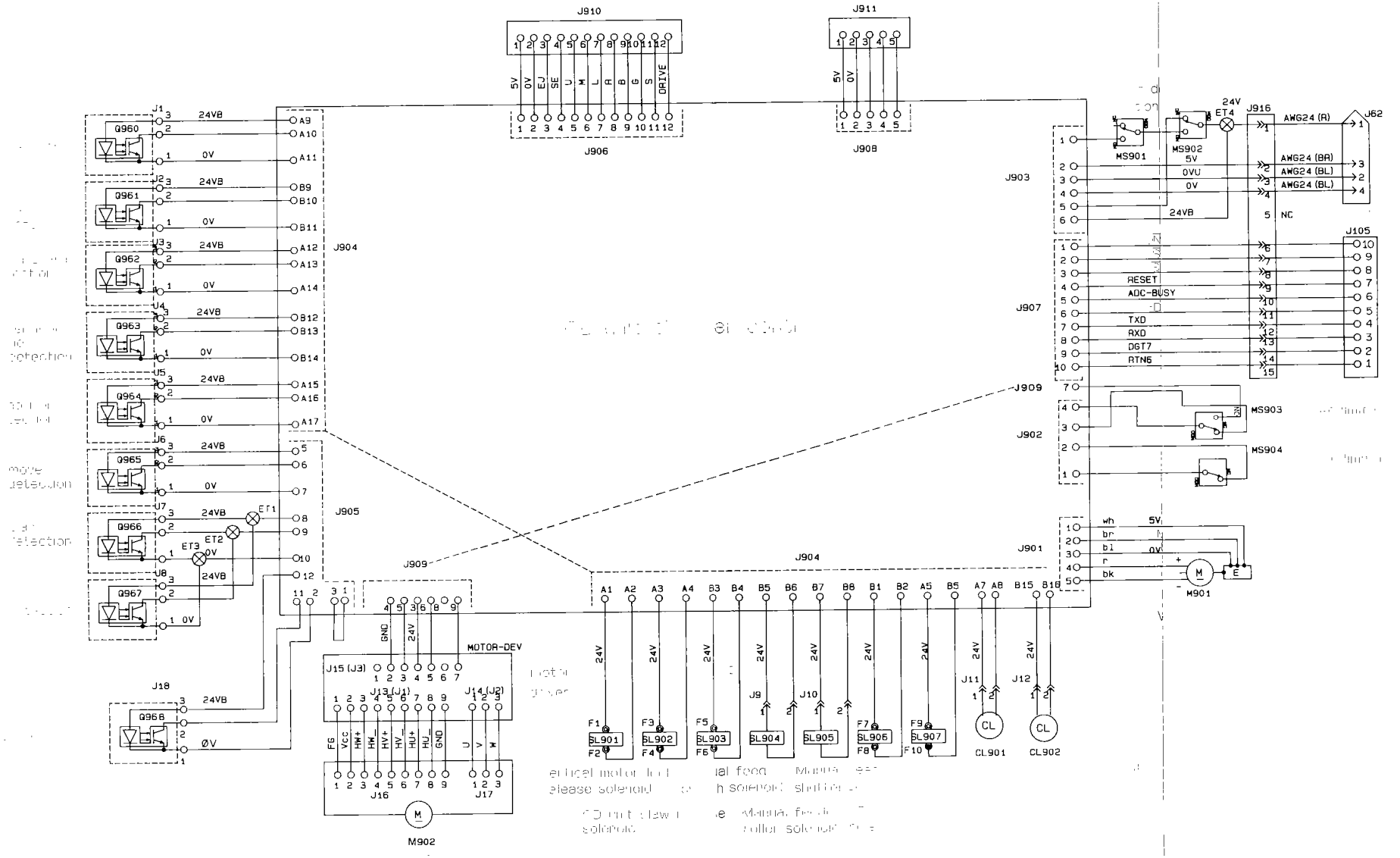
22. CASSETTE FEEDING UNIT CONTROLLER



23. CD UNIT CHANGER GENERAL CIRCUIT DIAGRAM (NP-4835/4835i only)



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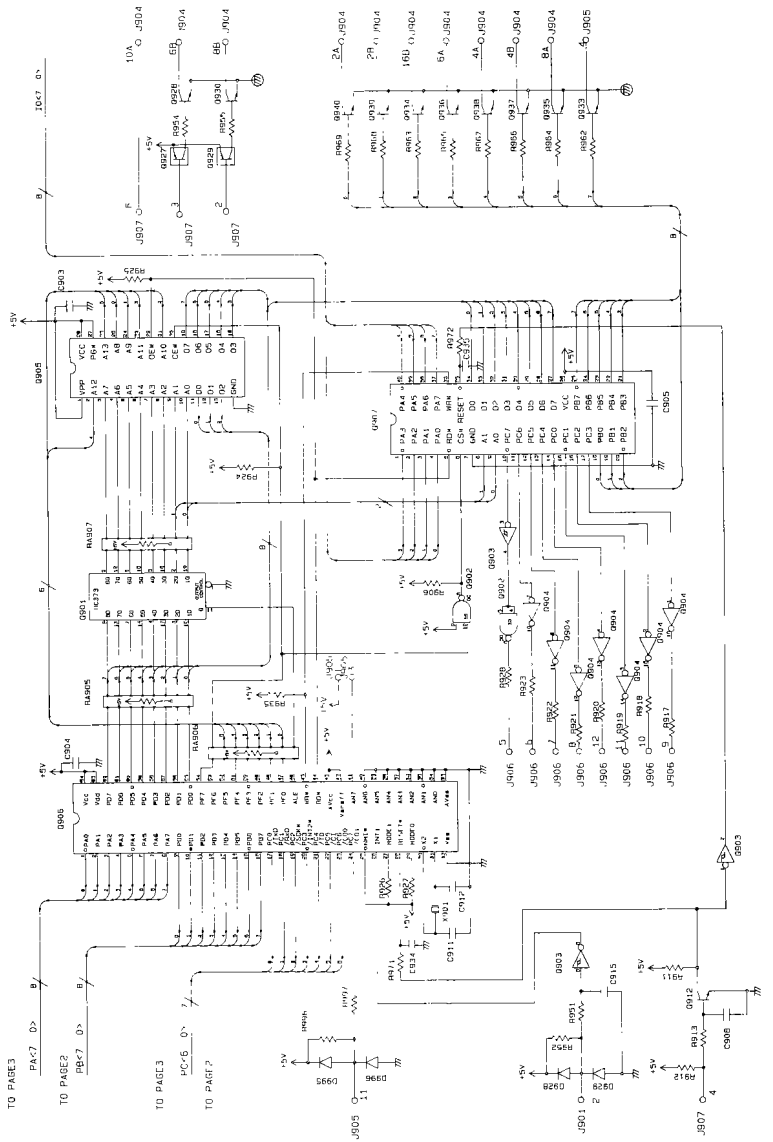
24. CD UNIT CHANGER CONTROLLER (NP-4835/4835i only)

CD unit changer controller (1/3)



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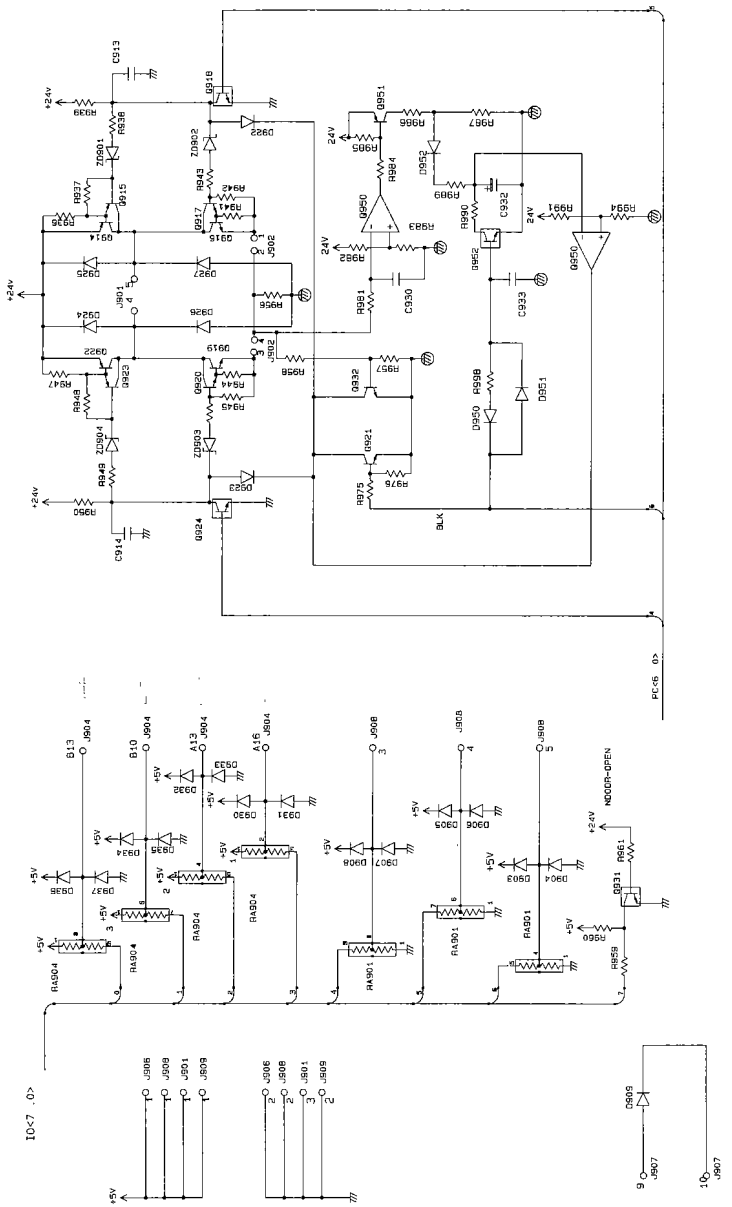
CD unit changer controller (2/3)



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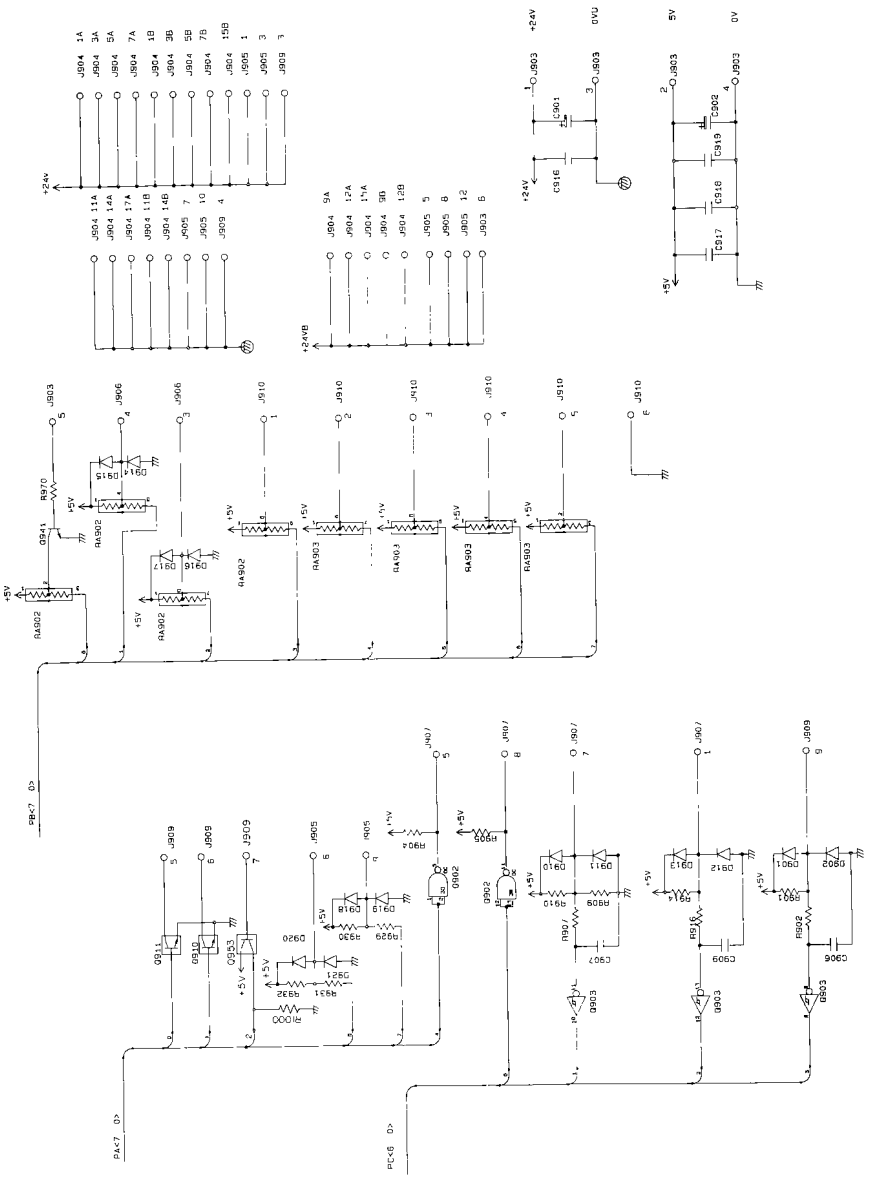
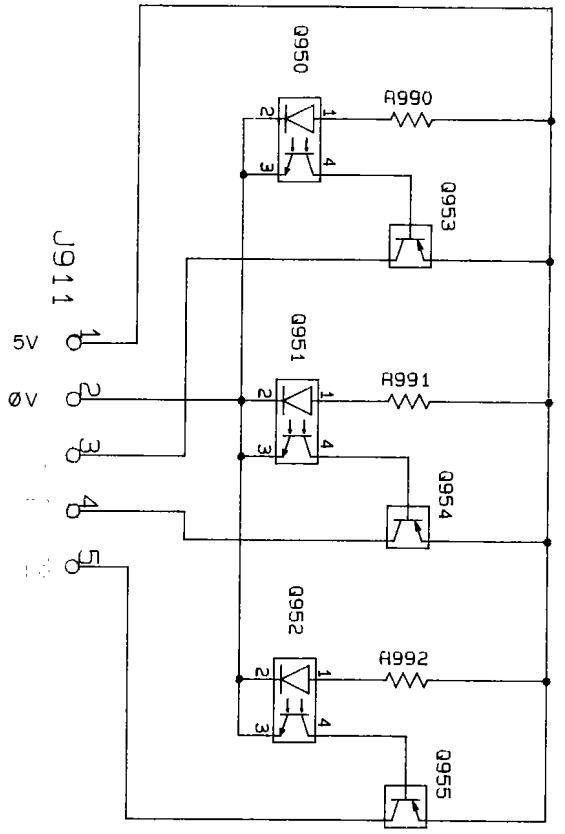
CD unit changer controller (3/3)



25. CD UNIT COLOR DETECTION (NP-4835/4835i only)



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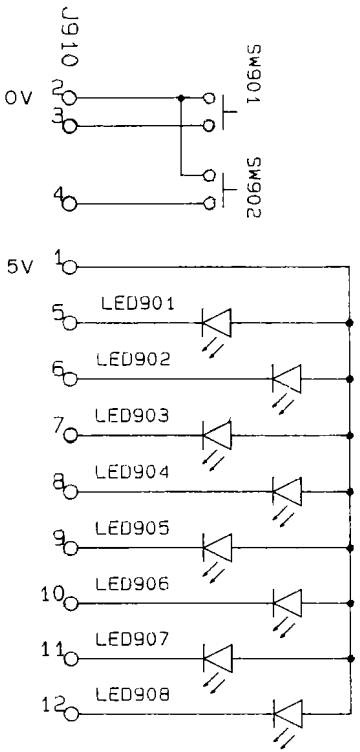
26. CD UNIT CHANGER CONTROL PANEL (NP-4835/4835i only)



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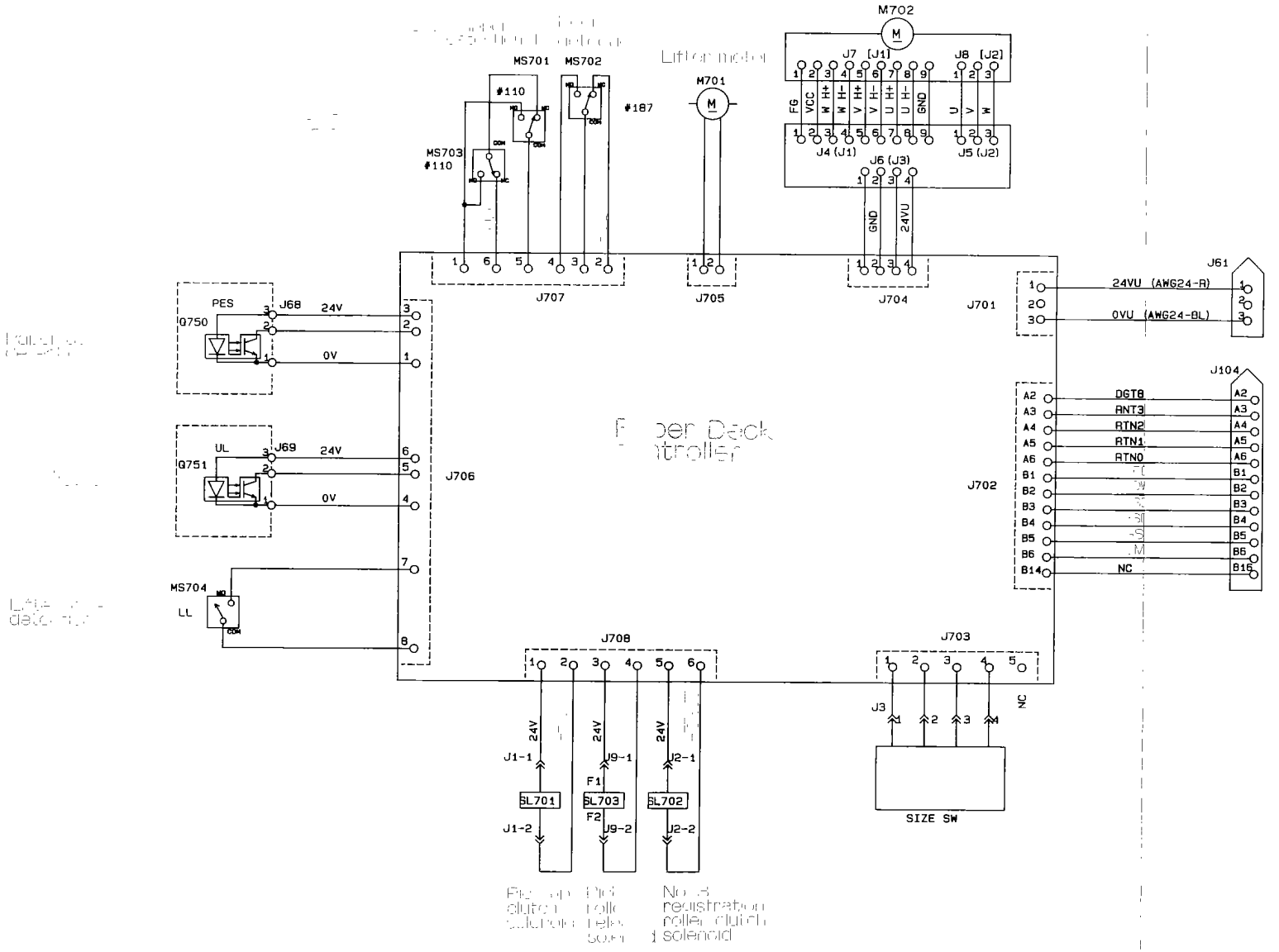

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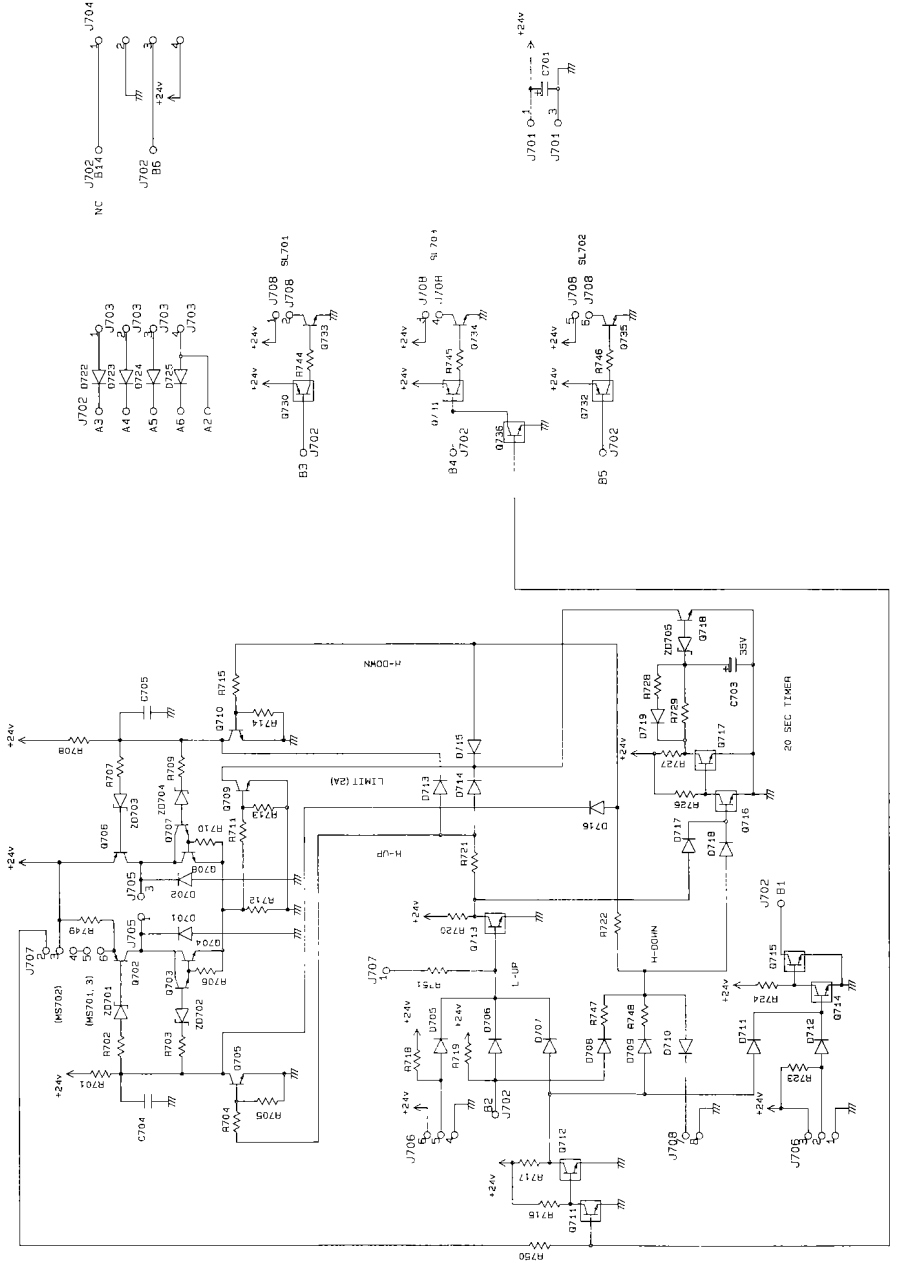
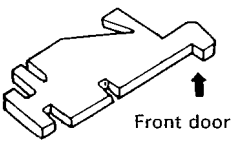
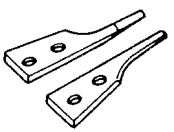
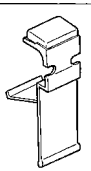
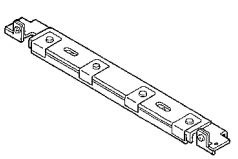
28. PAPER DECK CONTROLLER



29. LIST OF SPECIAL TOOLS

Special tools which are required for servicing this copier (in addition to the standard tool set) are listed below.

No.	Tool name	Tool No.	Shape	Code	Application/remarks
1	Door switch actuator	TKN-0093		A	
2	Spring scale (compression)	CK-0054		B	• Measuring strength of cassette springs • Adjust scanner drive cable tension
3	Extension blades for pliers	CK-0426		B	For removing grip rings: 4 – 9 mm
4	Cleaning oil	TKN-0464		A	Cleaning fixing rollers (10 pcs./1 carton)
5	Cleaning tool	TKN-0471		A	Cleaning laser mirror
6	Magnetic pole positioning tool	TKN-0472		B	To position magnetic pole for CD unit

Note: Rank
A: Each service technician should carry one with him.
B: A group of five service technicians should share one.
C: Each workshop should keep one.

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30. LIST OF SOLVENTS AND MATERIALS

No.	Material name	Use	Chemical formula, mixture ratio, etc.	Source	Remarks
1.	Ethyl alcohol (Ethanol) Isopropyl alcohol (Isopropanol)	Cleaning: copyboard, glass, mirror, etc.	C_2H_5OH $(CHZ_3)_2$ CHOH	Locally	Flammable. Use in a well-ventilated area. Avoid breathing concentrated vapor
2.	MEK	Removing toner or oil stains	$CH_3 \cdot CO \cdot C_2H_5$ Methylethyl ketone	Locally	Flammable. Use in a well-ventilated area and avoid breathing concentrated vapor. Avoid contact with eyes of skin. Do not use of cleaning the drum, plastic molded parts, or corona wires.
3.	Heat-resistant grease	Lubricating the drive mechanisms, e.g., copyboard driving gear, fixing drive gear, fixing ass'y, etc		CANON	Tool No.: CK-0427 (500g can) (Equivalent grease can be used, but should be able to with-stand 200°C for extended periods of time)
4.	Lubricating oil (low viscosity)	Lubrication points Scanner rail, etc.	ISO VG 68 oil ESSO Febis K68 MOBIL Vactraoil No 2 SHELL Tonna oil T68	Locally	Equivalent oil can be used. Tool No.: CK-0451 (100cc)
5.	Lubricating oil (low viscosity)	Lubrication point: One-way clutch in pick-up control unit	ISO VG 220 oil ESSO Febis K220 MOBIL Vactraoil No. 4	Locally	Equivalent oil can be used. Tool No CK-0524 (100cc)
6.	Detergent	Cleaning covers and panels of the machine	Mild detergent solution	Locally	Dish-washing detergent is acceptable.

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